ST17H26 set GPIO state /wake up low power consumption

Briefly：

Low power consumption is an essential part of BLE products. Among the wake source of the Low-power state, the setting of Gpio to wake up the Low-power state is relatively complicated.
The following is an introduction to some of the settings for Gpio as a wake-up source.
(a) In suspend mode, we generally call Gpio Awakening as a core awakening source .
In the Deep Sleep mode, the Gpio awakening is generally a pad awakening.
In Gpio wake suspend mode or DeepSleep mode, you need to set the following three sections:
(1) Enable Gpio wake up source, and set the wake up polarity.
a. In suspend mode, enabling the wake up source and set up polarity are mainly realized by the following functions.

Function	**gpio_enable_wakeup_pin(u32 pin, u32 level, int en);**	
parameter	pin [in]	The wake up gpio in suspend mode
	level [in]	Wakeup state. 0->wake up at lower level ， 1->wake up at upper level
		Notice : if set wake up at upper level ,then the chip cannot enter the suspend mode when it's in the upper level.
	en [in]	enable gpio wakeup。 1->enable. 0->disable
	e.g.	gpio_enable_wakeup_pin(GPIO_GP18 , 0, 1);
		enable gpio18 wake up from suspend at the lower level

b. In deep sleep mode, enabling the wake up source and set up polarity are mainly realized by the following functions.

Function	**cpu_set_gpio_wakeup (int pin, int pol, int en)**	
parameter	pin [in]	The wake up gpio in deep sleep mode
		Note: Not all Gpio can awaken DeepSleep.
		specified gpio can be found in datasheet.
	pol[in]	Wakeup state. 0->wake up at lower level， 1->wake up at upper level
		Notice : if set wake up at upper level ,then the chip cannot enter the suspend mode when it's in the upper level.
	en [in]	enable gpio wakeup。 1->enable. 0->disable
	e.g.	cpu_set_gpio_wakeup(GPIO_GP18 , 0, 1);
		enable gpio18 wake up from deepsleep at the lower level

2) enabling the wake up source and set up polarity in either suspend mode or deep sleep mode are mainly realized by the following functions.

A. In suspend mode, enabling the gpio as wake up source

Function	**blt_set_wakeup_source (int src)**	
Parameter	src [in]	suspend Wake up source. The parameters are selected as follows:
		PM_WAKEUP_CORE：Mainly used in Gpio suspend wake-up mode .
		PM_WAKEUP_TIMER:Timer wakeup（SDK default wake up mode）
	e.g.	blt_set_wakeup_source(PM_WAKEUP_CORE);
		enable gpio18 wake up from suspend at the lower level

B. Because of the characteristic of the DeepSleep (the wake-up from deepsleep is similar to system reboot), Deep Sleep can be realized by the following functions directly:

int cpu_sleep_wakeup (int deepsleep, int wakeup_src, u32 wakeup_tick);

Description: This function is used to enter the system Low-power state and set the wake up source.

Once this function is called, the system goes into a low-power state.

Parameter: Deep Sleep: 0->reps : enter suspend mode; 1-> reps : enter Deep Sleep mode.

WAKEUP_SRC:: Indicates the wake up source.

The values can be selected as follows:

PM_WAKEUP_CORE ,//indicates the Digital sector is partially awakened.(e.g. Gpio) for suspend mode

PM_WAKEUP_TIMER ,//Indicates a timer wake-up, for suspend mode and Deep Sleep

PM_WAKEUP_PAD ,//indicates gpio Awakening from Deep Sleep mode.

Wakeup_tick:: Time setting for timer wake-up,.The time is a future time spot not a period.

Function	cpu_sleep_wakeup (int deepsleep, int wakeup_src, u32 next_wakeup_tick)	
Parameter	deepsleep[in]	0->reps : enter suspend mode; 1-> reps : enter Deep Sleep mode.
	wakeup_src	*PM_WAKEUP_CORE* , // indicates the Digital sector is partially awakened.(e.g. Gpio) for suspend mode

		PM_WAKEUP_TIMER ,// Indicates a timer wake-up, for both suspend mode and Deep Sleep
		PM_WAKEUP_PAD , ///indicates specified gpio Awakening from Deep Sleep mode
	Wakeup_tick	Time setting for timer wake-up,.The time is a future time spot not a period.
	e.g.	cpu_sleep_wakeup (1, PM_WAKEUP_PAD, next_wakeup_tick)
		After call the above function, the system enters the DeepSleep mode state. This state can be only awakened by IO. If you use IO wakeup, you need to setup other configurations with IO ports.
		cpu_sleep_wakeup (1, PM_WAKEUP_PAD | PM_WAKEUP_TIMER,next_wakeup_tick)
		After call the above function, , the system enters a deepsleep mode state.which Can be awakened either by IO or by a timer.