Clock	Description
PCLK32KI	32.768 kHz peripheral low-frequency clock.
GRTC.LFLPRC	Direct path from 32.768 kHz internal oscillator (LFRC) to GRTC peripheral. Available only in System ON mode. If GRTC.LFLPRC is used, stop GRTC before entering System OFF mode.
GRTC.LFXO	Direct path from 32.768 kHz crystal oscillator (LFXO) to GRTC peripheral. Available in System ON or System OFF mode.

Table 21: Clocks

When a peripheral requires the PCLK32KI clock, the LFCLK control automatically requests the LFCLK clock for the power and clock subsystem. The default LFCLK source is the LFRC.

To use a different LFCLK source, select the preferred clock source in register LFCLK.SRC on page 84 and then trigger the LFCLKSTART task. If LFXO is selected as the clock source, LFCLK initially starts running from the 32.768 kHz LFRC then automatically switches to the crystal once available. The LFCLKSTARTED event is then generated.

When switching the LFCLK source, such as from LFRC to LFXO , up to one LFCLK cycle may be lost.

The LFCLKSTART task will request the clock to keep running until triggering the LFCLKSTOP task to stop the clock.

The LFCLK clock is stopped when there are no requests. For example, WDT is stopped, and the LFCLKSTOP task is triggered. Triggering the LFCLKSTOP task is required after the LFCLKSTART task has been triggered.

5.4.2.1 Calibrating the 32.768 kHz RC oscillator

The LFRC frequency is affected by temperature variation. LFRC can be calibrated to improve accuracy by using HFCLK as a reference oscillator during calibration.

The calibration must use the following sequence.

1. Start the LFCLK by triggering the LFCLKSTART task.
2. Start the HFCLK crystal oscillator HFXO by triggering the XOSTART task.
3. Wait for the LFCLKSTARTED and the HFXO XOTUNED events.
4. Trigger the CAL task to start the calibration process. The device automatically performs the calibration, adjusting the LFCLK frequency using HFCLK as reference. The DONE event is generated when calibration finishes.
5. Stop HFXO with the XOSTOP task.
6. Stop LFCLK with the LFCLKSTOP task.

LFCLK uses the calibrated value until the next calibration.

5.4.3 Registers

Instances

Instance	Domain	Base address	TrustZone			Split access	Description
			Map	Att	DMA		
CLOCK : S CLOCK : NS	GLOBAL	0x5010E000 0x4010E000	US	S	NA	No	Clock control