

Sample code for reading the SYSCOUNTER value:

```
uint32_t syscounterl_value, syscounterh_value, syscounterh;
uint64_t syscounter;

do
{
    syscounterl_value = GRTC.SYSCOUNTER[m].SYSCOUNTERL;
    syscounterh = GRTC.SYSCOUNTER[m].SYSCOUNTERH;

    syscounterh_value = ((syscounterh & GRTC_SYSCOUNTER_SYSCOUNTERH_VALUE_Msk) >>
GRTC_SYSCOUNTER_SYSCOUNTERH_VALUE_Pos);

    if (((syscounterh & GRTC_SYSCOUNTER_SYSCOUNTERH_OVERFLOW_Msk) >>
GRTC_SYSCOUNTER_SYSCOUNTERH_OVERFLOW_Pos) ==
GRTC_SYSCOUNTER_SYSCOUNTERH_OVERFLOW_Overflow)
    {
        syscounterh = syscounterh_value - 1;
    }

} while (((syscounterh & GRTC_SYSCOUNTER_SYSCOUNTERH_BUSY_Msk) >>
GRTC_SYSCOUNTER_SYSCOUNTERH_BUSY_Pos) != GRTC_SYSCOUNTER_SYSCOUNTERH_BUSY_Ready);

syscounter = (syscounterh_value << 32) + syscounterl_value;
```

Compare and Capture (CC)

The **CC[n]** is a group of registers interfacing the compare and capture channels of SYSCOUNTER, where *n* is the number of compare and capture channels specified in the GRTC instance configuration table below. Each **CC[n]** has an associated **TASKS_CAPTURE[n]** task and **EVENTS_COMPARE[n]** event. Each channel compare functionality can be enabled/disabled with **CC[n].CCEN.ACTIVE**, and its current active state read from this same register.

The **EVENTS_COMPARE[n]** event can be generated by writing the compare values to the corresponding **CC[n].CCL** and **CC[n].CCH** registers. When a channel compare functionality is enabled and SYSCOUNTER is equal or greater than that CC value **EVENTS_COMPARE[n]** will be generated. Writes to **CC[n].CCL** disable the corresponding compare channel and writes to **CC[n].CCH** enable it. So **CC[n].CCL** must be written first.

Each channel compare functionality, except for the first channel when operating in periodic mode, operates in one-shot mode. When operating in one-shot mode, **CC[n].CCEN.ACTIVE** is cleared automatically following a compare event.

Moreover, a compare channel is automatically disabled when triggering **TASKS_CAPTURE[n]**.

The **EVENTS_COMPARE[n]** event is generated immediately if the configured compare value at **CC[n]** is less than the current SYSCOUNTER value.

Every time the **TASKS_CAPTURE[n]** task is triggered, the current SYSCOUNTER is copied into the corresponding **CC[n].CCL** and **CC[n].CCH** registers. The **CC[n].CCL** and **CC[n].CCH** registers can be read in any order. The **TASKS_CAPTURE[n]** task will not generate **EVENTS_COMPARE[n]** event.

The **TASKS_CAPTURE[n]** tasks and **EVENTS_COMPARE[n]** events can be connected with the PPI. However, the **TASKS_CAPTURE[n]** is functional only when the SYSCOUNTER is in active state. The GRTC can be forced into active state by setting any **SYSCOUNTER[n].ACTIVE** register.