# CNTSCR, Counter Scale Register

The CNTSCR characteristics are:

## Purpose

Enables the counter, controls the counter frequency setting, and controls counter behavior during debug.

## Configuration

It is implementation defined whether CNTSCR is implemented in the Core power domain or in the Debug power domain.

This register is present only when FEAT_CNTSC is implemented. Otherwise, direct accesses to CNTSCR are res0.

For more information, see 'Power and reset domains for the system level implementation of the Generic Timer'.

## Attributes

CNTSCR is a 32-bit register.

## Field descriptions

| 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ScaleVal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

### ScaleVal, bits [31:0]

Scale Value

When counter scaling is enabled, ScaleVal is the average amount added to the counter value for one period of the frequency of the Generic counter as described in the CNTFRQ register.

The actual rate of update of the counter value is determined by the counter update frequency.

ScaleVal is expressed as an unsigned fixed point number with an 8-bit integer value and a 24-bit fractional value.

CNTSCR.ScaleVal can only be changed when CNTCR.EN == 0. If the value of this field is changed when CNTCR.EN == 1:

- The counter value becomes unknown.

- The counter value remains unknown on future ticks of the clock.

The reset behavior of this field is:

- On a Timer reset, this field resets to an architecturally unknown value.

## Accessing CNTSCR

In a system that supports Secure and Non-secure memory maps the CNTControlBase frame, that includes this register, is implemented only in the Secure memory map.

**CNTSCR can be accessed through the memory-mapped interfaces:**

| Component | Frame | Offset | Instance |
|---|---|---|---|
| Timer | CNTControlBase | 0x10 | CNTSCR |

Accesses on this interface are **RW**.

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