

# SAGA Clock-Cycle Register



## Overview

Clock-Cycle Register is a new SAGA Read-Only register. It is unique feature, never seen in other 68K existing system. It allows to get, in real-time, the number of cycles consumed by one or more CPU instructions. This register can come in handy when programmer need to optimize his code and locate greedy routines.

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## Name

- SAGA\_CLOCK\_COUNTER

## Address

- 0xDE0008

## Access

- Read-Only

## Size

- 32-bits
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## Description

Each time register is read, the internal counter is reinitialized to 0.

Can overflow if the delay between two calls is too long.

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## Example

```
TEST:
  move.l #$CAFECAFE,d1 ; Operand for DIVU.L
  tst.l  $DE0008      ; Reset the Clock-Cycle counter
  divu.l #100,d1     ; Consume some CPU cycles
  move.l $DE0008,d0  ; D0 = Number of cycles consumed by the DIVU
instruction.
  rts
```

## Macros

```
DEBUG EQU 1

SAGA_CLOCK_COUNTER EQU $DE0008

CLKCNT_RESET MACRO
  IFNE DEBUG
  tst.l SAGA_CLOCK_COUNTER
  ENDC
  ENDM

CLKCNT_SAVE MACRO
  IFNE DEBUG
  move.l SAGA_CLOCK_COUNTER, __\1
  ENDC
  ENDM

CLKCNT_ADD MACRO
  IFNE DEBUG
  move.l d0, -(sp)
  move.l SAGA_CLOCK_COUNTER, d0
  add.l  d0, __\1
  move.l (sp)+, d0
  ENDC
  ENDM
```

```
MyRoutine:
  move.l #$CAFECAFE,d1 ; Operand for DIVU
  CLKCNT_RESET          ; Reset the Clock-Cycle counter
  divu.l #100,d1       ; Consume some CPU cycles
  CLKCNT_SAVE MyCounter ; Save the number of cycles in MyCounter
  RTS
```

```
MyCounter: DC.L 0
```

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