

# 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 instructions. This register can come in handy when programmer need to optimize his code and locate greedy routines.

## Name

- SAGA\_CLOCK\_COUNTER

## Address

- 0xDE0008

## Access

- Read-Only

## Size

- 32-bits

## 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_CLKCNT EQU $DE0008

CLKCNT_RESET MACRO
    IFNE DEBUG
        tst.l SAGA_CLKCNT
    ENDC
ENDM

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

CLKCNT_ADD MACRO
    IFNE DEBUG
        move.l d0, -(sp)
        move.l SAGA_CLKCNT, 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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