

Date: July 25, 2000

Technical Note: TN13 revision 3

CPG Technical Marketing

AMD Duron™ Processor Rev. A0: CPUID Reporting of L2 Cache Size

Abstract:

The AMD Duron™ processor, revision A0 (CPUID 630) contains an erratum that will result in the incorrect reporting of the internal L2 cache size if the CPUID extended function 8000_0006h is used. If BIOS or any other utility uses this instruction when reporting the L2 cache size, then it is recommended that BIOS or the utility adjust the return value from this instruction as described below in “Solution.” For more information, refer to the:

- *AMD Duron™ Processor Revision Guide*, order# 23865
- *AMD Processor Recognition Application Note*, order# 20734
- *AMD Athlon™ and AMD Duron™ Processors Recognition Addendum*, order# 21922.

Description:

When the CPUID extended function 8000_0006h is used to obtain cache information, the AMD Duron processor rev. A0 (CPUID 630) reports the L2 cache size incorrectly.

Solution:

Consider the code below for executing CPUID extended function 8000_0006h:

```
mov    eax, 80000006h ;CPUID Fn 80000006h
CPUID                ;ecx[31:16] = L2 size info
shr    ecx, 16        ;cx = L2 size (in either KB or 64KB)
```

Do not use CPUID to determine the L2 cache size for the AMD Duron processor. Instead use the following code:

```
; Check for A0 revision Duron(tm) processor
mov    eax, 1         ;CPUID Fn 1
CPUID                ;ax = CPU version information
cmp    ax, 0630h     ;Is CPU a Rev A0 AMD Duron processor?
mov    cx, 64        ;(assume yes)
je     @f            ; YES--L2 size is 64K
                    ; NO---use CPUID function to get
                    ; L2 size
mov    eax, 80000006h ;CPUID Fn 80000006h
CPUID                ;ecx[31:16] = L2 size info
shr    ecx, 16        ;Shift L2 size bits into cx

@@:;cx = L2 size in KB
```