

Archived:CPUs of S60 3rd Edition and later devices

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CPUs used on S60 3rd and later devices belongs to ARM architecture.

ARM architecture is a 32-bit RISC CPU architecture developed by ARM Limited. Because ARM architecture has a low power consumption feature, ARM architecture based CPUs are widely used in embedded device, eg, Mobile phone. ARM Limited grants ARM architecture to various semiconductor manufacturers which will produce CPU based on ARM architecture.

ARM cores has following mainline architecture versions.

ARM1, ARM2, ARM3, ARM6, ARM7, ARM8, ARM9, ARM10, ARM11, Cortex

CPU based on ARM9E and ARM11 are used on S60 3rd and later devices. Most S60 3rd phone use ARM9 cores. For example, N91, 3250, E70, N73. Nokia N93 is the first S60 phone adopting ARM11 core. Since S60 3rd FP1, almost all Nokia S60 Smartphones begin to adopt ARM11 core, except N96 which adopts a ARM9 core.

Features of ARM9E

1. supporting ARM, Thumb and DSP instruction sets.
2. supporting Jazelle technology provides Java acceleration.
3. 5-stage integer pipeline.
4. Integrated instruction and data caches.
5. Integrated memory management unit.
6. 16-entry write buffer.

Texas Instruments OMAP1710 is a typical ARM9E architecture CPU.

Features of ARM11

1. ARMv6 instruction set architecture.
2. supporting Jazelle technology provides Java acceleration.
3. supporting ARM Thumb instruction set and ARM DSP extensions.
4. supporting SIMD (Single Instruction Multiple Data) media processing extensions.
5. 8-stage integer pipeline.
6. Branch Prediction and Return Stack.
7. Supports 4-64k cache sizes.

Texas Instruments OMAP2420 is a typical ARM11 architecture CPU.

APIs to check CPU information

The HAL (Hardware Abstraction Layer) APIs provides information about CPU type, architecture, and clock speed.

```
#include <hal.h>
TInt cpuSpeed, cpuABI, ret;
ret = HAL::Get( HALData::ECPUSpeed, cpuSpeed );
ret = HAL::Get( HALData::EPCUABI, cpuABI );
```

