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Cortex-M4 and Cortex-M7

*The DSP capabilities of ARM -M4 and
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Arm DSP instruction set extensions
increase the DSP processing
capability of Arm solutions in high-
performance applications, while*

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offering the low-power consumption required by portable, battery-powered devices. Due to their flexibility, Arm DSP instructions touch a wide range of applications and industries.

*DSP – Arm
ARM's Digital Signal Controllers,
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*Arm has been working on technologies
that boost the signal processing and
machine learning capabilities without
the pain by combining them into one
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recently, Arm announced the new Arm Cortex-M55 processor to take efficient on-device processing to the next level and simplify software development so billions more ...

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applications Designed for discrete processing and microcontrollers.

Unleash the DSP performance of Arm Helium technology is the M-Profile Vector Extension (MVE) for the Arm Cortex-M processor series. Helium is an extension of the

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Armv8.1-M architecture and delivers a significant performance uplift for machine learning (ML) and digital signal processing (DSP) applications. The Cortex-M55 processor is the first Arm processor to support Helium, which enables small, low-power embedded systems to manage the

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*Helium Technology – Arm
4. DSP Extension. The optional integer DSP extension adds 85 instructions. In most cases, the DSP instructions*

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ARM Processors with this mode will support the extended DSP Instruction Set for high performance DSP

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applications. With these extended DSP instructions, the DSP performance of the ARM Processors can be increased without high clock frequencies. J – Jazelle. ARM Processors with Jazelle Technology can be used in accelerated execution of Java bytecodes.

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Arm Cortex-M processor portfolio,
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*Signal processing capabilities of
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instructions All Armv7-R and Armv8-R
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operations for multiply, accumulate, and divide operations, as well as support saturated arithmetic.

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In this article, learn more about the multi-core, DSP acceleration, and co-

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processing features of the LPC5500 series of microcontrollers. Arm-Cortex-M33-based MCUs offer such features as a novel coprocessor interface that can be used in embedded applications to achieve significant speed-ups.

The Multi-Core and DSP Capabilities

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Arm DSP instruction set extensions increase the DSP processing capability of Arm solutions in high-performance applications, while offering the low-power consumption required by portable, battery-powered devices. Due to their flexibility, Arm DSP instructions touch a wide range of

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Cortex-M4 and Cortex-M7 processors is the addition of DSP extensions to the Thumb instruction set, as defined in ARM's architecture ARMv7-M and the optional floating-point unit (FPU).

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