



# Motor and Motion Control for Humanoids and Mobile Robots

MOBILE-ROBOTICS-MOTION-CONTROL-HOLOSCAN-

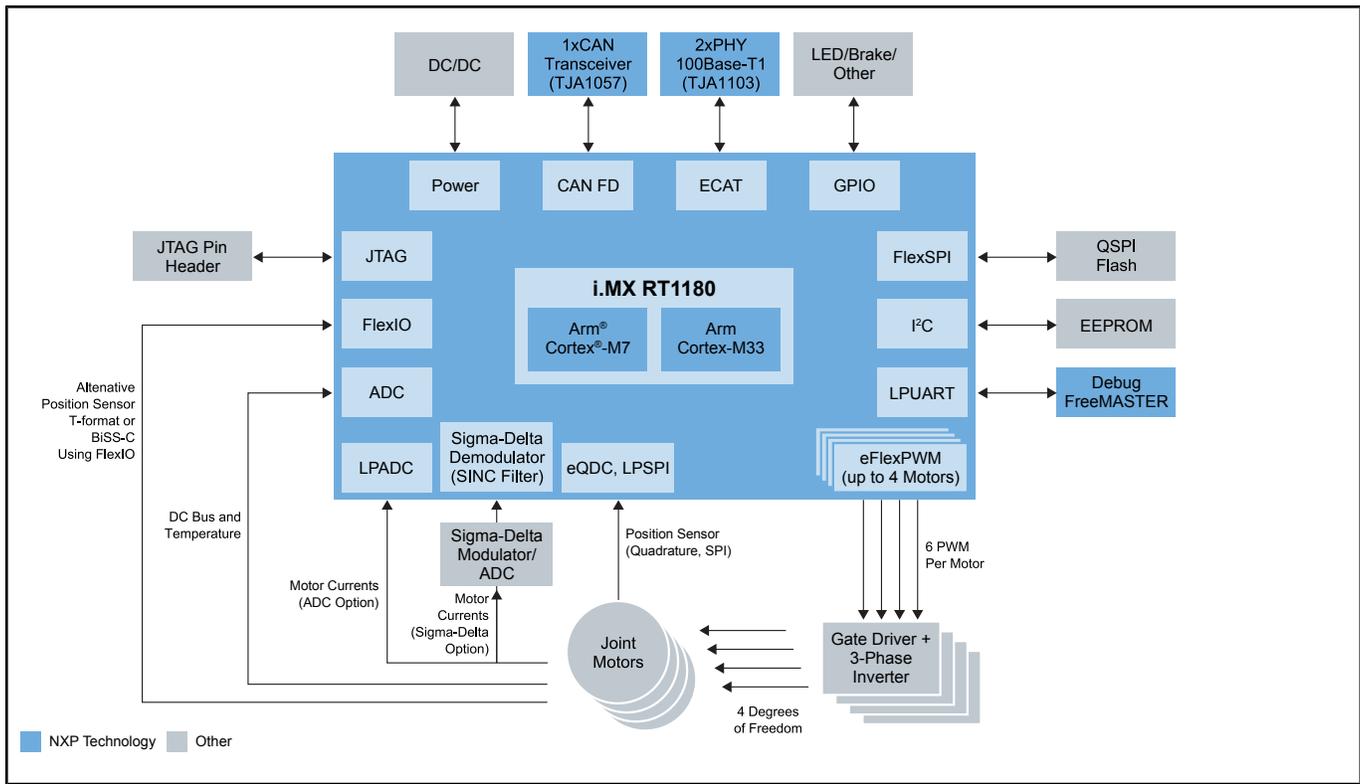
**SENSOR** NEW

Last Updated: Mar 16, 2026

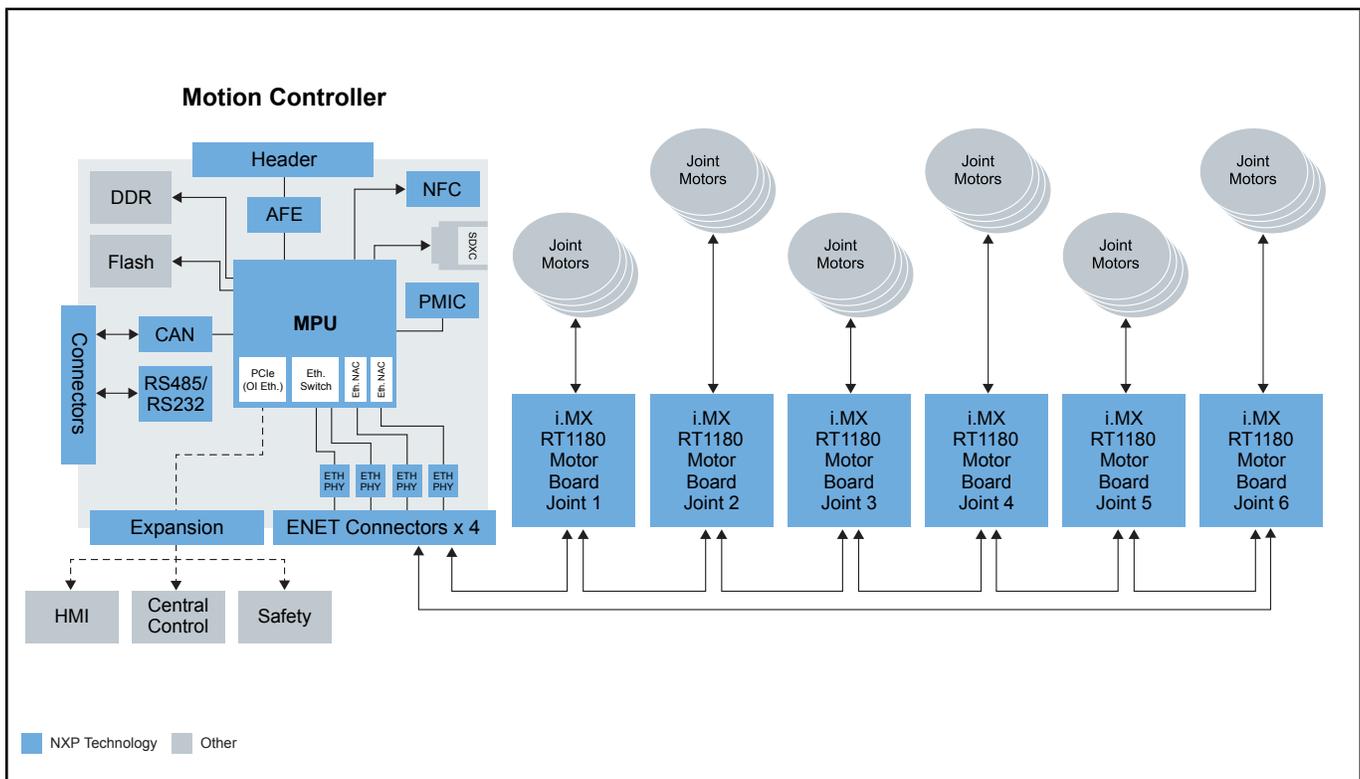
This robotics control solution delivers precise, deterministic motion control for humanoid robots, collaborative robots and autonomous mobile platforms. Designed for synchronized kinematic chains and multi-axis joint control, it enables efficient, scalable and safe motion across complex robotic systems.

Built on NXP's real-time processing portfolio, including i.MX RT crossover MCUs and scalable MCX microcontrollers, the architecture combines advanced motor control, integrated networking and industrial communication support. This integrates deterministic connectivity using time-sensitive networking (TSN) and EtherCAT®, enabling low-latency coordination between distributed joints and centralized control for humanoid limbs and robotic arms.

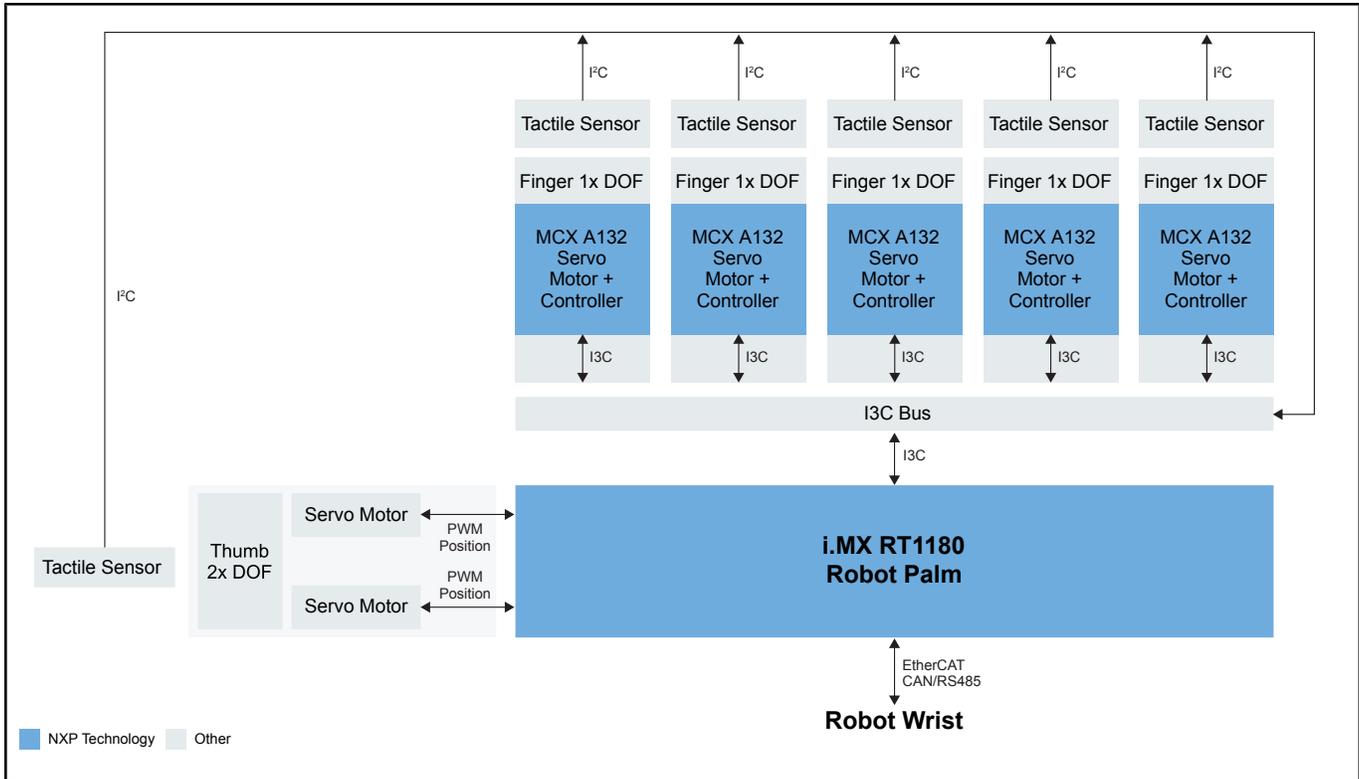
## Motor Driver for Humanoid Joint Module Block Diagram



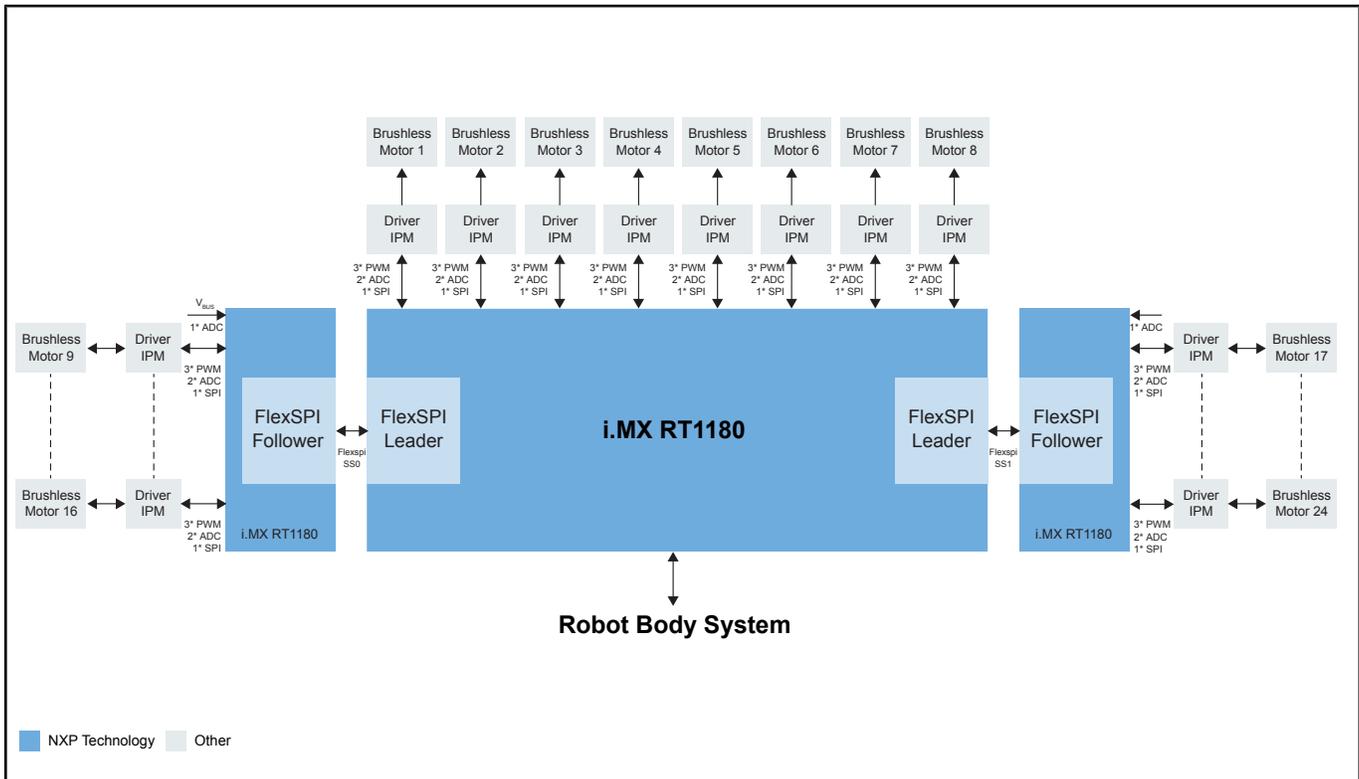
## Cobot or Humanoid Arm Block Diagram



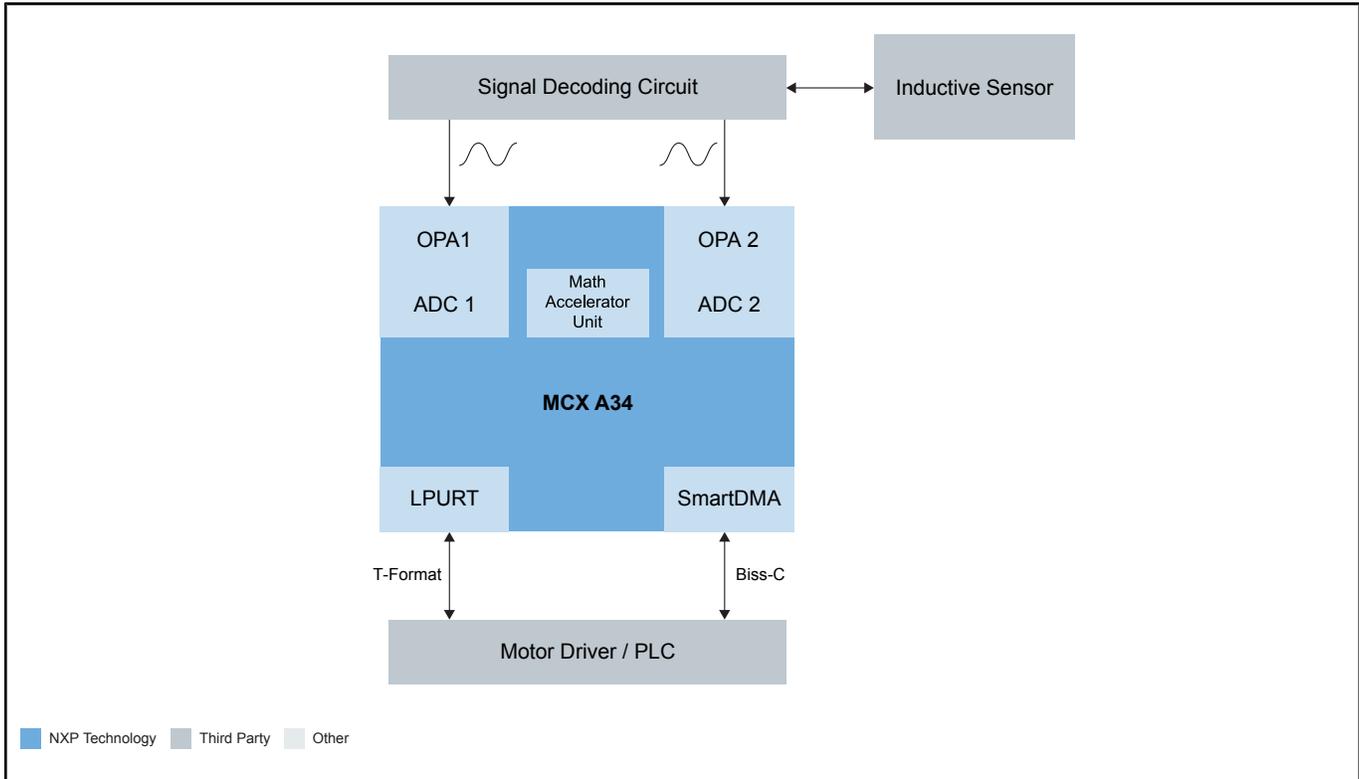
## Simple Dexterous Hand Block Diagram



## Advanced Dexterous Hand Block Diagram



## Inductive Encoder Block Diagram



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**Note:** The information on this document is subject to change without notice.

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