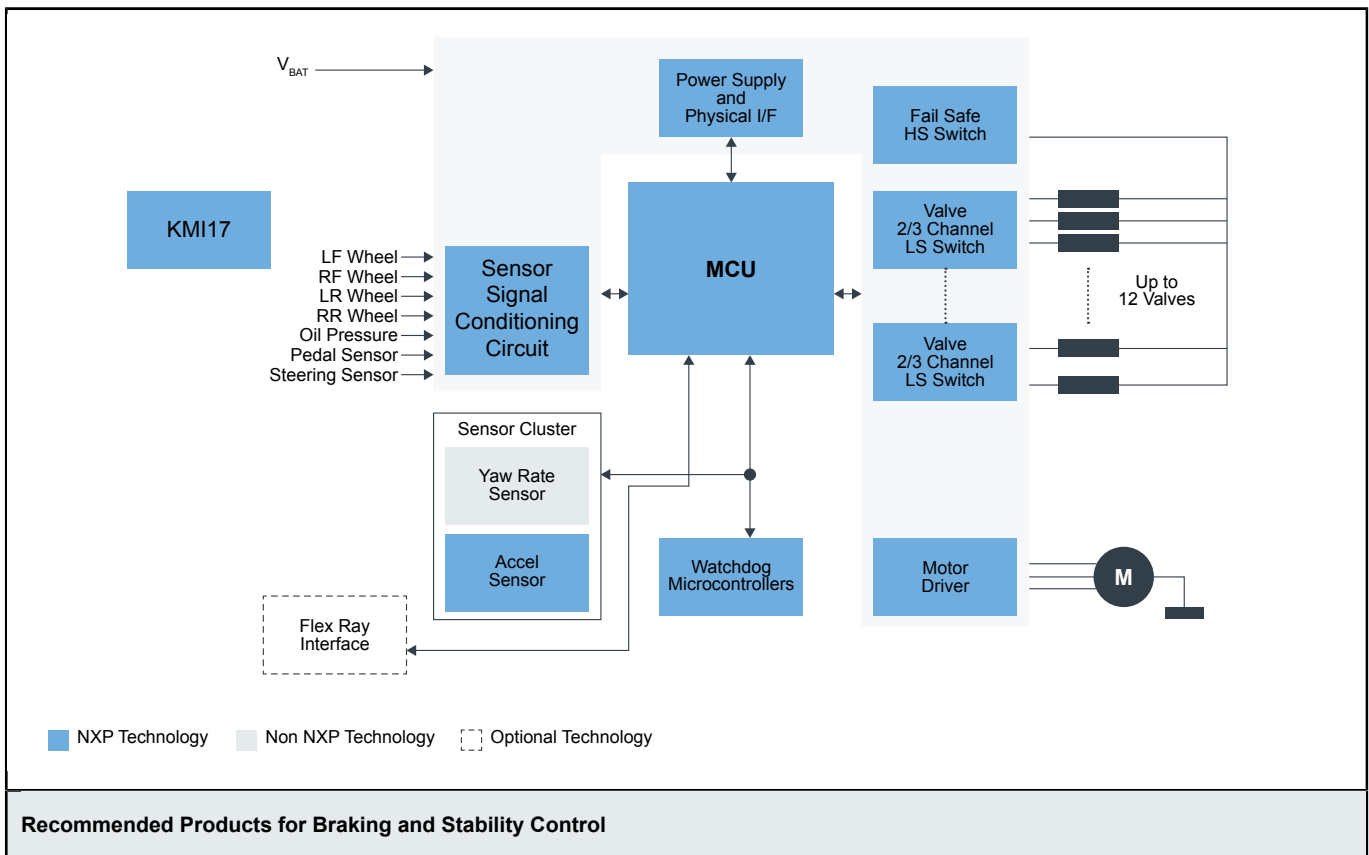# Braking and Stability Control

Last Updated: Dec 22, 2022

NXP enables active and passive vehicle safety features such as Electronic Stability Control (ESC) and Anti-lock Braking Systems (ABS) to help drivers maintain control for vehicles, motorcycles and scooters.

NXP microcontrollers and sensors help maintain the vehicle's intended trajectory. An integrated braking IC helps with safe stopping distance. Our safety 32-bit MCU enables individual control of brake forces at each wheel. NXP sensing solutions provide acceleration information, including fault and diagnostics. The power management supplies the system, combining different safety critical functions to help keep the driver on the road.

Braking and Stability Control Block Diagram

Recommended Products for Braking and Stability Control

Valve 2/3 Channel LS/Switch	• MC33810: Automotive Engine Control IC • MC33882: 6 Output Switch, SPI, Parallel Input Control
Microcontrollers (MCU)	• MPC574xP: Ultra-Reliable MPC574xP MCU for Automotive & Industrial Safety Applications • MPC560xP: Ultra-Reliable MPC560xP MCU for Automotive & Industrial Safety Applications • MPC564xL: Ultra-Reliable Dual-Core 32-bit MCU for Automotive and Industrial Applications • MPC560xB: Ultra-Reliable MPC56xB MCU for Automotive and Industrial General Purpose
Acceleration Sensor	• MMA69xxKQ: SPI ±3.5 g or ±5.0 g XY-Axis, Low-g, Digital Inertial Sensor
Motor Driver	• MC33931: H-Bridge, Brushed DC Motor Driver, 5-28 V, 5 A, 11 kHz • MC33926: H-Bridge, Brushed DC Motor Driver, 5-28 V, 5 A, 20 kHz • HB2000: SPI Programmable 10 A H-Bridge Brushed DC Motor Driver • HB2001: SPI Programmable 10 A H-Bridge Brushed DC Motor Driver • MC33937: 3-Phase Field Effect Transistor Pre-Driver • GD3000: 3-Phase Brushless Motor Pre-Driver
Power Supply and Physical Interface	• MC33904: System Basis Chip Gen2 with High Speed CAN • SB0400: Two-Wheel Antilock Braking (ABS) Controller for Motorcycles • FS4500: Grade 1 and Grade 0 Safety Power System Basis Chip with CAN Flexible Data Transceiver • FS6500: Grade 1 and Grade 0 Safety Power System Basis Chip with CAN Flexible Data Transceiver
FailSafe HS Switch	• MC12XS2: 12 V Multipurpose Low RDSON eXtreme Switch
Sensor Signal Conditioning Circuit	
Watchdog Microcontrollers (MCU)	• S32Z2 Safe and Secure High-Performance Real-Time Processors • S32E2: S32E2 Safe and Secure High-Performance Real-Time Processors with Actuation Support • S12XS: S12XS Automotive and Industrial Microcontrollers (MCUs) • S12P: S12P Automotive and Industrial Microcontrollers (MCUs) • S08SG: 8-bit Small Package SG MCUs

View our complete solution for Braking and Stability Control.

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