Braking and Stability Control

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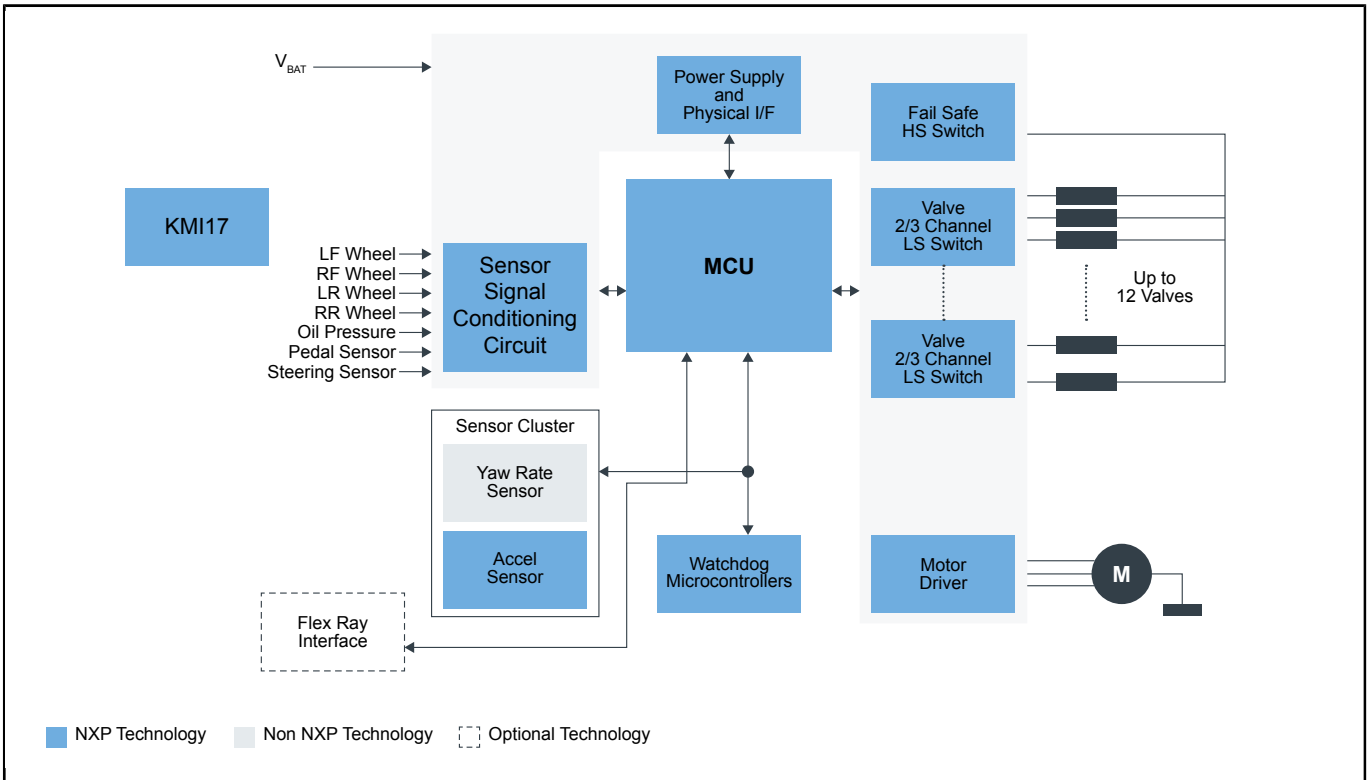
NXP enables active and passive vehicle safety features such as Electronic Stability Control (ESC) and Anti-lock Braking Systems (ABS) to help drivers maintain control for vehicles, motorcycles and scooters.

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)	• S32K3: S32K3 Microcontrollers for Automotive General Purpose • S32K39-37-36: S32K39/37/36 Microcontrollers for Electrification Applications • S32Z2: S32Z2 Safe and Secure High-Performance Real-Time Processors • MPC5775B-E: MPC5775B and MPC5775E Microcontrollers for Battery Management Systems (BMS) and Inverter Applications
Acceleration Sensor	• FXLS90: DSI3/SPI Automotive Safety Digital Accelerometer • FXLS93: PSI5 Automotive Safety Digital Accelerometer • FXLS8961AF: ±2g/±4g/±8g/±16g, Low Power 12-Bit Digital Accelerometer
Motor Driver	• HB2002: SPI-Programmable H-Bridge Brushed DC 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	• FS26: Safety System Basis Chip with Low Power, for ASIL D Systems • FS84: Safety System Basis Chip for S32 Microcontrollers, Fit for ASIL B • FS85: Safety System Basis Chip for S32 Microcontrollers, Fit for ASIL D • FS86: Safety System Basis Chip For Domain Controller, Fit For ASIL B and D • 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	• NTM88: NTM88 Highly Integrated Tire Pressure Sensor Family
Watchdog Microcontrollers (MCU)	• S32K1: S32K1 Microcontrollers for Automotive General Purpose

View our complete solution for Braking and Stability Control.

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