S32K3 AUTOMOTIVE MCU **FAMILY** SIMPLIFIES SOFTWARE DEVELOPMENT

The S32K3 family includes scalable 32-bit Arm® Cortex® -M7 based MCUs in single, dual and Lockstep core configurations supporting up to ASIL-D level safety. Features include a hardware security subsystem with NXP firmware, support for firmware over-the-air (FOTA) updates and free ISO 26262 compliant real-time software drivers for AUTOSAR® and non-AUTOSAR. S32K3 MCUs are available in NXP's new MaxQFP packaging technology which reduces package footprint by up to 55% compared with standard QFP package.

FEATURES AND PERFORMANCE

- Lockstep Arm Cortex-M7 cores, 120-240 MHz + FPU
- 512KB - 8MB Flash with ECC
- FOTA – A/B firmware swap with zero downtime and roll-back support. Automatic address translation
- 12-bit 1Msps ADCs, 16-bit eMIOS timers with logic control unit for motor control
- Low power Run and Standby modes, fast wake-up, clock and power gating
- MaxQFP and BGA packages

SAFETY, SECURITY AND CONNECTIVITY

- ISO 26262 up to ASIL-D
- Fault collection and control unit
- Hardware and software watchdogs, clock/power/temperature monitors
- Safety documentation and SafeAssure community support
- HSE security engine - AES-128/192/256, RSA and ECC encryption; secure boot and key storage; side channel protection; ISO 21434 intended
- Ethernet TSN and AVB (10/100 Mbps), I3C, CAN-FD, FlexIO (SPI/IIC/IIS/SENT protocol), serial audio interface, QSPI

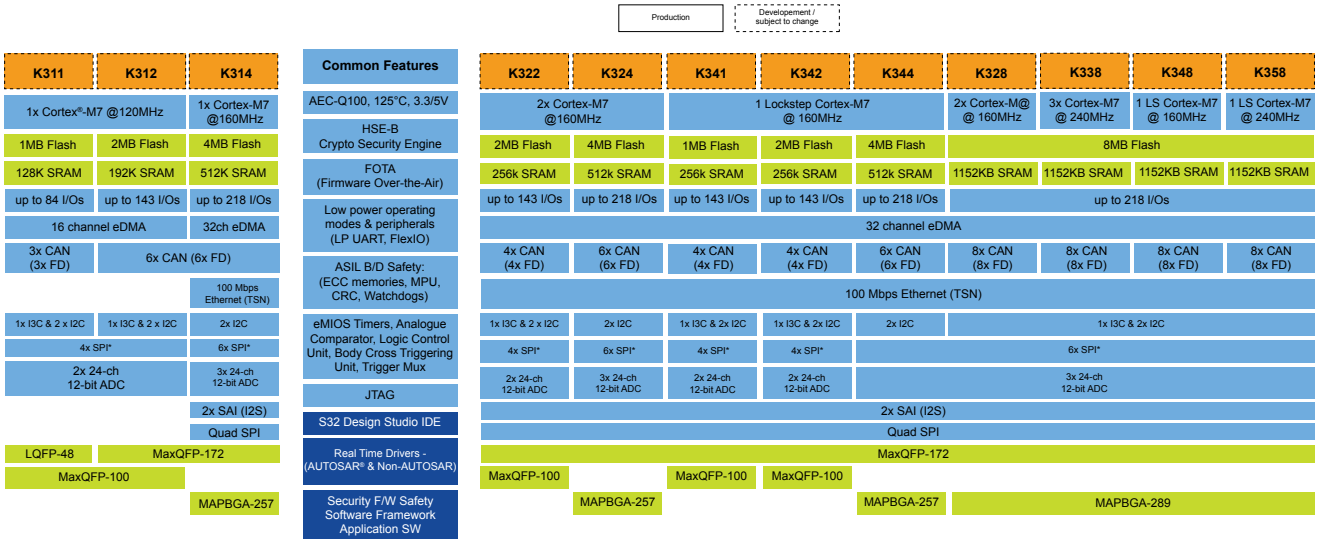
PRODUCTION-GRADE SOFTWARE

- Real-time Drivers – free of charge (AUTOSAR and non-AUTOSAR), ASIL-D compliant
- Security firmware – NXP provided, field upgradeable
- Safety Framework Software, Core Self-Test library
- S32 Design Studio IDE – Eclipse, GCC and debugger, 3rd party support
- MATLAB® Model Based Design Tools

MAXQFP PACKAGE TECHNOLOGY

- QFP ‘gull-wing’ + PLCC ‘J-lead’ in single package
- 172-pin (16 x 16 mm), 100-pin (10 x 10 mm), 0.65 mm pin pitch
- AEC-Q100 qualified
- -40 to +125 °C ambient temperature

S32K3 FAMILY BLOCK DIAGRAM



*Ethernet 10BaseT1S supported by SPI + external MAC&PHY

PARTNERS

- IAR Systems
- Arm Keil
- Green Hills
- iSystem
- PandE Micro
- Lauterbach
- Vector
- Elektrobit
- ETAS
- MathWorks
- Airbiquity

APPLICATIONS

- Body controllers
- Zone controllers
- Battery management systems
- Infotainment IO controller
- E-shifter
- Motor control – BSG, turbo charger, fan/pump controller

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