



High Performance 77GHz RFCMOS Automotive Radar One-Chip SoC

SAF85XX

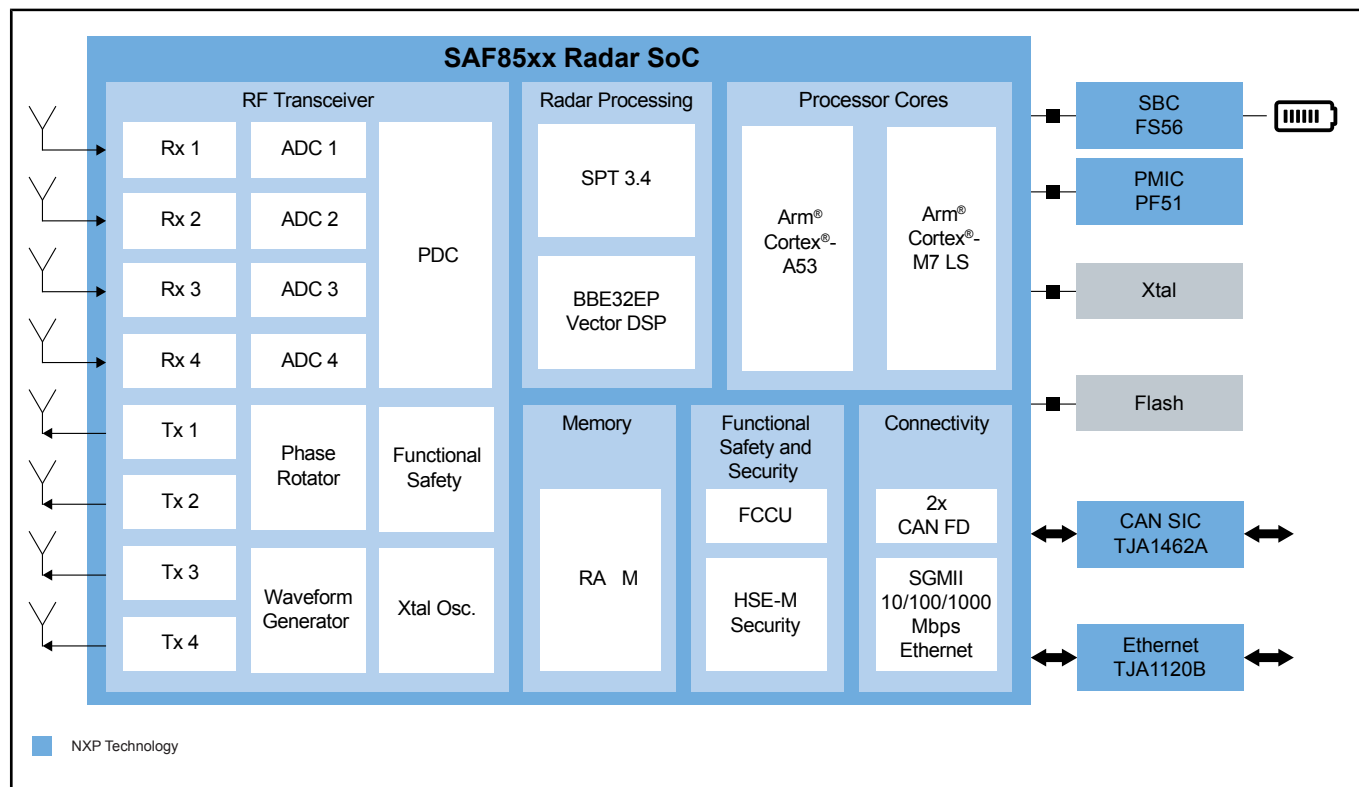
Last Updated: Dec 23, 2025

The SAF85xx RFCMOS automotive radar System-on-Chip (SoC) is a high performance one-chip for automotive FMCW radar application, which is optimized for fast chirp modulation. This device is designed to operate from 76 GHz to 81 GHz covering the full automotive radar frequency band. SAF85xx integrates a radar transceiver with radar microprocessor unit (MPU) based on Arm® Cortex® - A53, Arm Cortex - M7 cores and SRAM. Entry NCAP sensor all the way up to high performance front radar sensors are enabled by this 3rd generation RFCMOS radar device supporting short-range, medium-range and long-range radar applications in a compact form factor.

This fully integrated RFCMOS chip contains 4 transmitters, 4 receivers, ADC conversion, phase rotator, low-phase-noise VCO, SPT radar accelerator, BBE32 Vector DSP, Arm Cortex - A53, Arm Cortex - M7 cores and SRAM to support various use cases and different radar data outputs such as object data, point cloud data or FFT output.

SAF85xx is an ISO 26262 compliant device targeting ASIL Level B and is developed to meet the latest SHE+, EVITA Full security requirements through its HSE security engine.

SAF85xx Block Diagram



View additional information for [High Performance 77GHz RFCMOS Automotive Radar One-Chip SoC](#).

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

www.nxp.com

NXP and the NXP logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. The related technology may be protected by any or all of patents, copyrights, designs and trade secrets. All rights reserved. © 2026 NXP B.V.