

Analogue radio and AI/ML-enabled audio processor for automotive infotainment



The [SAF9800](#) integrates an analogue radio (AM/FM) tuner and a high-performance HiFi 5-based audio digital signal processor (DSP) with artificial intelligence/machine learning (AI/ML) capabilities into a single system-on-chip (SoC), helping to simplify system design and reduce cost. Designed for scalable infotainment and software-defined vehicle architectures, it enables flexible feature configuration through software, accelerates time-to-market, and allows platforms to scale from entry-level to premium audio experiences.

Key features

- Integrated AM/FM analogue radio tuner
- Single or dual tuner configuration
- 70 MHz wideband tuner (full FM band coverage)
- HiFi 5 DSP (600 MHz) with neural network accelerators
- 5 MB shared SRAM for audio and radio processing
- Integrated audio hub
- Up to 12 ADC inputs
- Up to 20 asynchronous sample rate converters
- Flexible digital audio I/O: I2S, TDM
- Software-controlled feature scalability (keycode-based)
- Supports Audio Weaver and open core HiFi 5 SDKs
- Support for third-party audio IPs
- ASIL-A audio support
- Compact 9 x 9 mm package

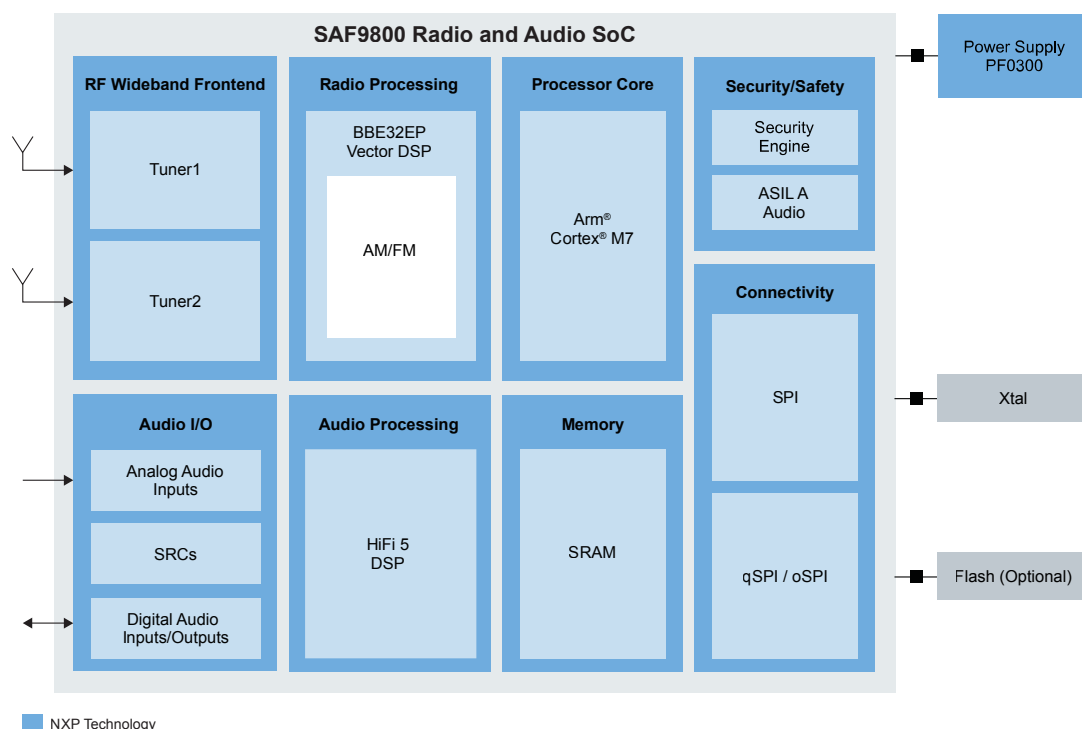
Target applications

- Connected radio
- Automotive infotainment head units
- Car audio systems
- Software-defined vehicle (SDV) audio architectures
- Entry to high-end IVI platforms

Software and tools

- DSP Concepts® Audio Weaver® (AWE Lite included)
- Open-core HiFi 5 SDK (XtensaXplorer included)
- Neural Network Extensions support for AI/ML audio processing
- Multi-canvas, multi-rate audio processing
- Third-party audio ecosystem integration
- Software keycode-based feature enablement
- OTA-ready feature upgrades

SAF9800 block diagram



Benefits

- Highly integrated solution combining radio + audio DSP
- Up to 85% footprint reduction vs. previous architectures
- Lower system cost and power consumption
- Scalable across multiple vehicle segments
- Faster development and time-to-market
- Supports future software-defined vehicle architectures
- Enables AI/ML-driven audio innovation
- One software configurable hardware platform for multiple use cases

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