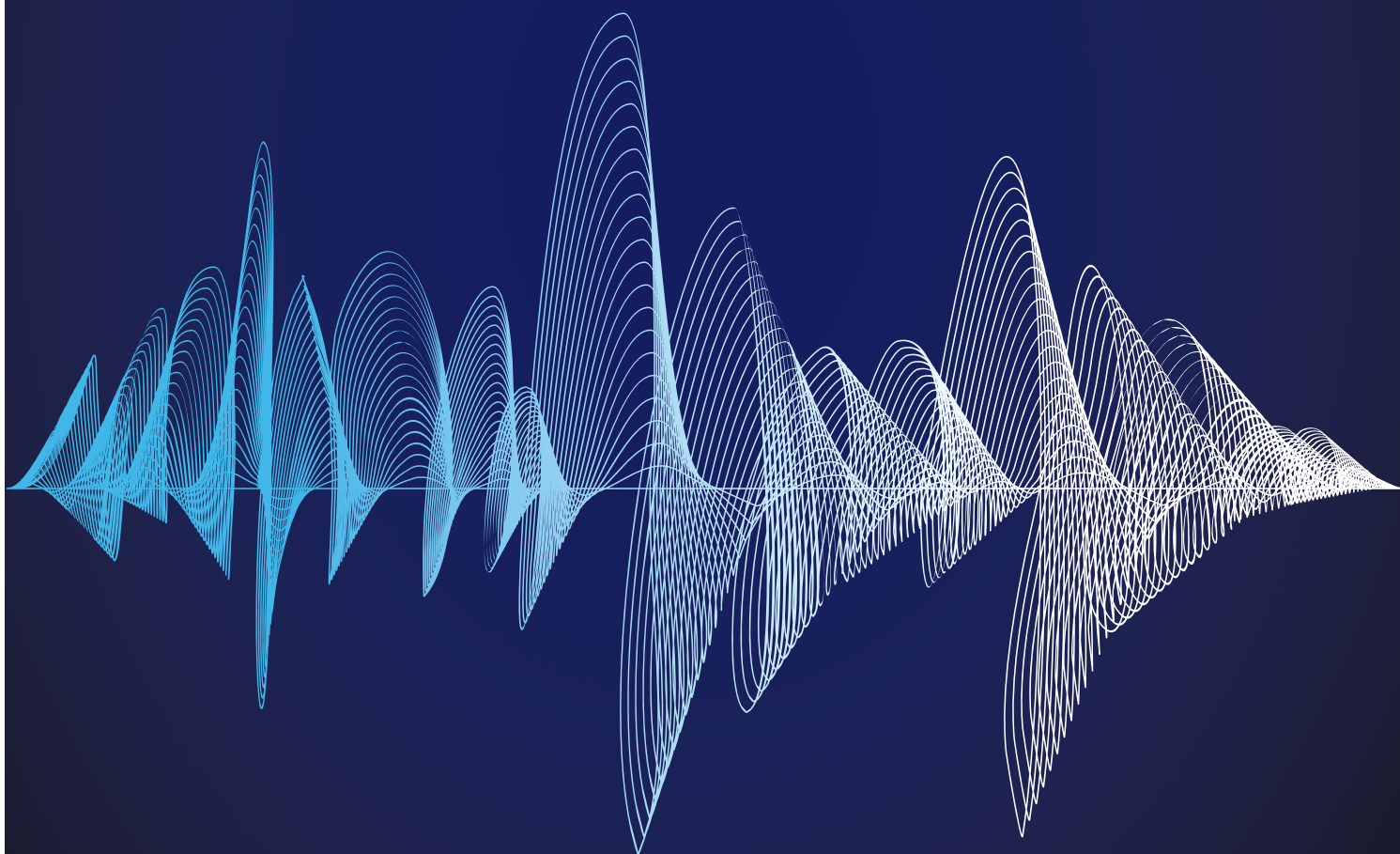


PRODUCT BRIEF

QNX Acoustics Management Platform



The QNX® Acoustics Management Platform (AMP) represents a breakthrough in acoustics for cars. For the first time, automakers can design and manage the total audio experience in their cars with software that runs on a wide range of automotive application processors – saving costs and shortening time to production, while delivering new features and high sound quality.

Modern cars contain multiple acoustic and audio signal-processing systems (handling the many microphones and speakers, music, noise and echo cancellation, in-car communication etc.) all running simultaneously. These systems often interact with each other in unpredictable ways, unless great care is taken to make each subsystem aware of the others. QNX AMP eliminates this integration headache by offering a unified approach to managing acoustics in the car, allowing subsystems to work together harmoniously. To further reduce software integration efforts, QNX AMP comes pre-configured with built-in audio-signal routing.

Leveraging the power of the QNX Neutrino® Realtime OS, QNX AMP uses a low-latency audio architecture that offers real-time, high-performance signal processing on general-purpose application processors – with unprecedented time resolution as low as one millisecond. As a result, automakers, at their choice can eliminate proprietary digital signal processing (DSP) cores or specialized external hardware to implement compute-intensive acoustics applications, thereby reducing significant cost.

QNX AMP manages the complexity of real-time signal processing needed for today's cars; and reacts quickly with flexible software components and graphical tooling to meet the complex world of multiple microphone arrays, speakers and in-car connected devices.

QNX AMP integrates a comprehensive suite of acoustics modules, which include:

QNX Acoustics for Voice (QAV) – Provides a high-quality handsfree telephony experience, with support for narrow and wideband Bluetooth audio and for next-generation smartphone telephony, concierge voice services, and cloud-based speech recognition at up to 48 kHz sample rates. QAV builds on the award-winning performance of QNX acoustics technology that has integrated into millions of automotive systems worldwide. Apple CarPlay™ and Android Auto™ integration is supported, as well as the International Telecommunications Union (ITU) P.1140 standard for emergency calling (eCall) in automotive. DSP solutions and Linux-based solutions are available upon request.

QNX In-Car Communication (ICC) – For anyone who has struggled to hold a conversation in a car at highway speeds,

QNX ICC enhances the voice of the driver and relays it instantly to appropriate loudspeakers in the vehicle. QNX ICC enables safer conversations – instead of shouting or having to turn around to be heard, the driver can talk normally to passengers while keeping their eyes on the road. Multiple capture and playback zones allow front to back and passenger-to-passenger communication. QNX ICC dynamically adapts to noise conditions and adds enhancement only when needed. With QNX ICC, automakers can leverage their existing handsfree telephony microphones and infotainment loudspeakers to add a feature that consumers will immediately appreciate. QNX ICC also adds optional entertainment sounds, including karaoke effects so that voices can be pleasantly enhanced.

QNX Acoustics for Active Sound Design (ASD) – The ambient noise in the vehicle must be properly controlled. QNX ASD includes a suite of software components that reduces unwanted cabin noise, enhances and creates new engine sounds and projects sounds to pedestrians. Current sound design components include QNX Active Noise Control (ANC), QNX Engine Sound Enhancement (ESE) and QNX External Pedestrian Alert (XPA). These sound components can be tuned and calibrated in real-time using the QNX LiveAMP Windows-based graphical toolchain.

Tooling and Integration - QNX AMP includes a comprehensive LiveAMP tuning tool that allows developers to perform real-time adjustments of all system parameters, to inject or stream signals at multiple tap-points in the system, and to view real-time spectrum and waveform displays. QNX LiveAMP is also used for initial pre-tuning of vehicle acoustics in the laboratory.

Availability

The QNX Acoustics Management Platform is available now.

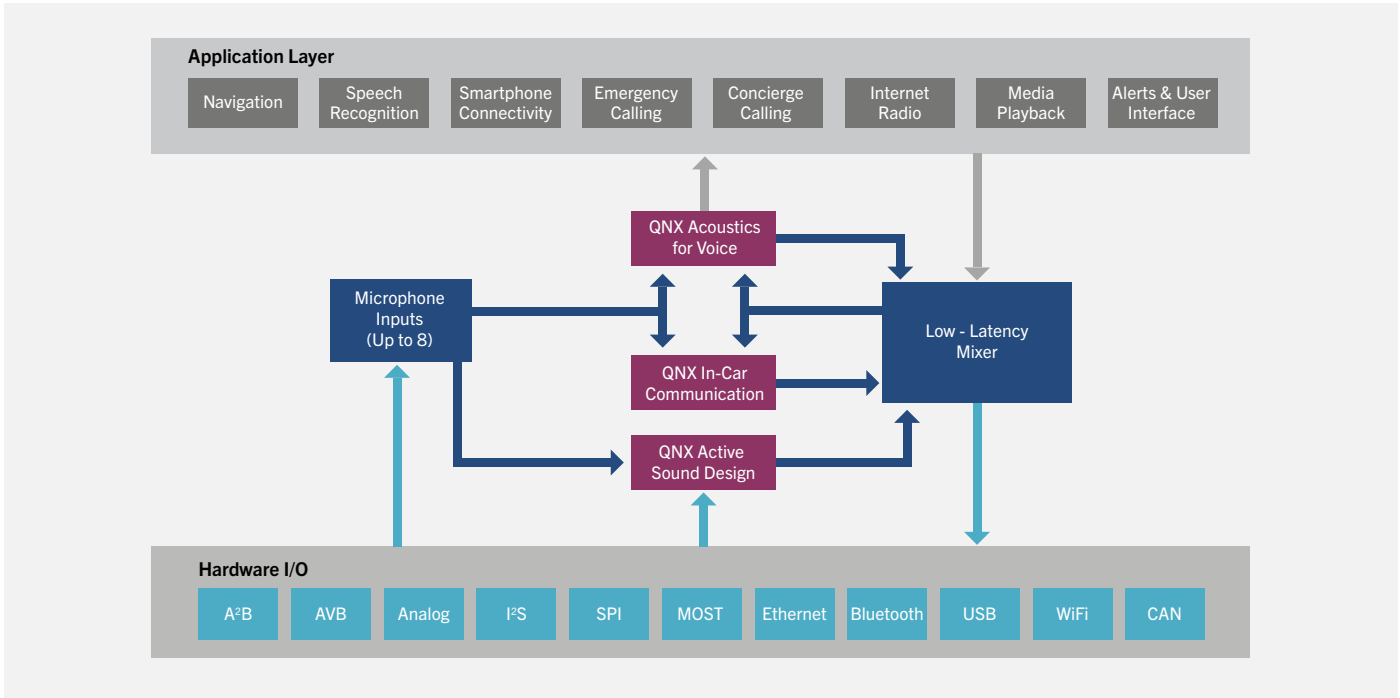


Figure 1: The QNX Acoustic Management Platform manages the complex acoustic connections between hardware and the application layer; while also providing signal-processing modules for echo-cancellation, noise control and in-car communications.

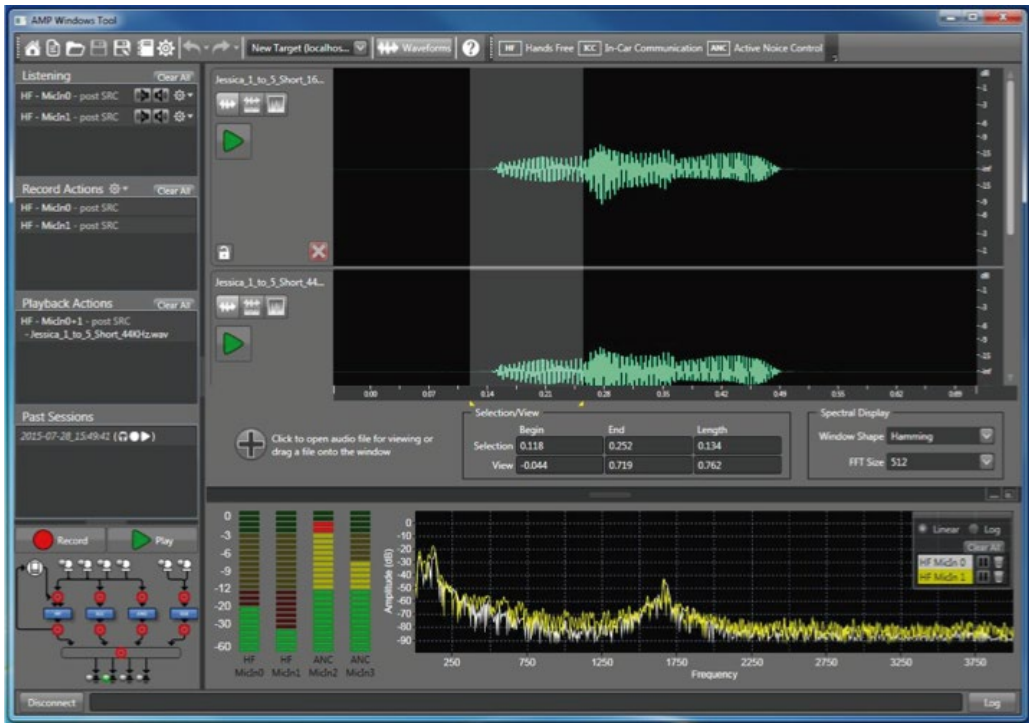


Figure 2: QNX LiveAMP Graphical Tool: real-time signal analysis and waveform generation

About BlackBerry QNX

BlackBerry QNX, is a leading supplier of safe, secure, and trusted operating systems, development tools, and professional services for connected embedded systems. Global leaders such as Ford, Audi, Cisco, General Electric, Lockheed Martin, and Siemens depend on BlackBerry QNX technologies for their next generation of secure vehicle software platforms, network routers, medical devices, industrial automation systems, security and defense systems, and other mission and/or life-critical applications. This includes full software lifecycle management via secure over the air software updates. Founded in 1980, BlackBerry QNX is headquartered in Ottawa, Canada, with its products distributed in over 100 countries worldwide.

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