

Snapdragon® S5 Gen 1 Sound Platform



The Snapdragon S5 Gen 1 Sound Platform is designed to elevate the audio experience of premium Bluetooth® wireless earbuds, headphones, and speakers.

This powerful platform is designed to improve the audio performance of premium Bluetooth audio devices. With three times more compute power and fifty times more on-device AI than the Qualcomm® S5 Gen 2 Sound Platform, it helps power rich and responsive experiences for music, calls, and gaming.

A new multicore architecture combined with enhanced development tools can help reduce the time to market for richly featured devices to help meet the ever-evolving needs of listeners. The development tools are also compatible with our Snapdragon S7 Gen 1 Sound Platforms to help ease development across all tiers of devices.

The Snapdragon S5 Gen 1 Sound Platform is designed to enhance your listening experience with amazing sound that adapts to how and where a device is being used. It brings powerful 4th Generation Qualcomm® Adaptive Active Noise Cancellation (ANC) to the S5 tier for the first time, and also supports the Snapdragon Sound™ Technology Suite for lossless music streaming as well as superior, low-latency sound.

Powerful on-device AI can enhance the sound experience across many different use cases, including voice calls, hearing enhancement, and hearing loss compensation.

The data is processed locally on device while a dedicated processor for AI and enhanced power management ensures optimal performance and user experience with minimal battery drain.

Highlights

Elevating Premium Audio Experiences

A new architecture delivers 3x the compute power, 2x the DSP power, 1.5x more memory, and 50x more on-device AI than the Qualcomm S5 Gen 2 Sound Platform. This can help audio equipment manufacturers take the performance of their premium earbuds, headphones, and speakers to the next level and deliver amazing experiences for music listening, gaming, and enterprise.

4th Generation Qualcomm Adaptive ANC

An all-new platform hardware architecture supports low-latency, low-power, multi-channel ANC. For the user, this means our strongest-ever ANC performance, offering even more responsive ANC in places like a busy office or café. The ANC is also designed to automatically and dynamically adapt to provide strong ANC performance based on different variables, including variations in fit, whether the earbud becomes loose in the ear during movement, or whether the noise in the surrounding environment suddenly changes. Transparency mode is supported for situations where the user needs to let sounds from the outside world in, and the ANC will automatically and easily transition between modes.

AI-Driven Hearing Enhancement

Powerful on-device AI works in conjunction with hearing enhancement technologies to deliver a more seamless user experience by understanding and adapting to user needs throughout the day.

Snapdragon Sound Technology Suite

Snapdragon Sound utilizes Qualcomm® aptX™ Adaptive Audio, which supports lossless music streaming, low latency for lag-free gaming, and superior connectivity.

Snapdragon S5 Gen 1 Sound Platform

Designed to unlock a new tier of audio performance

	Lossless Audio (48kHz)	Gaming Mode	Compute	Audio Curation
Snapdragon S5 Gen 1 Sound Platform (QCC5229)	Classic Bluetooth, LE Audio	Classic Bluetooth, LE Audio	AI: Qualcomm eNPU 38 GOPS DSP: 1x 350 MHz and 1x 150 MHz Memory: 6 MB RAM Storage: 16 MB Flash	4th Generation Qualcomm Adaptive ANC, Low-Latency DSP
Qualcomm S5 Gen 2 Sound Platform (QCC5181)	Classic Bluetooth, LE Audio	Classic Bluetooth, LE Audio	DSP: 2x 240 MHz Memory: 2.64 MB RAM Storage: External	3rd Generation Qualcomm Adaptive ANC

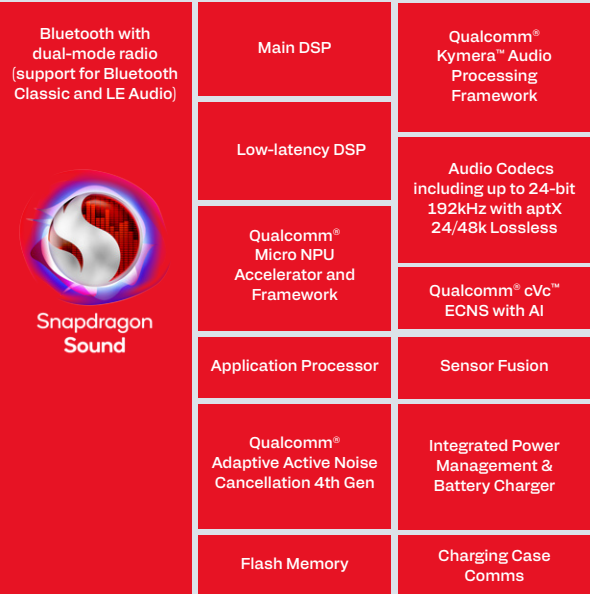
Features

- A new platform architecture unlocks a new tier of performance for premium devices
- Almost 50x more AI power than the Qualcomm S5 Gen 2 Sound Platform
- 50% more memory and 2x more audio DSP compute than the Qualcomm S5 Gen 2 Sound Platform
- Dedicated AI core to provide higher performance and lower power requirements for ML applications compared to using the DSP
- Dedicated cores for audio curation, including hearing loss compensation, ANC, transparency, and noise management
- Hi-Fi-grade stereo audio codec
- 4th Generation Qualcomm Adaptive ANC
- Bluetooth 6.2 radio and Bluetooth LE Audio experiences, including Auracast™ Broadcast Audio
- USB High-Speed PHY at 480 Mbps, which unlocks enhanced Audio Development workflows
- Non-invasive, low-level debug through use of Qualcomm® USB-EUD
- Enhanced memory and peripheral data sharing across subsystems for lower latency and higher throughputs
- DMIC, I2S, TDM, and Soundwire digital audio interfaces
- Fully integrated system including PMU, charger, mic bias, flash memory, and external supply support
- High-performance audio combined with low power consumption

Target Applications

- Earbuds
- Speakers
- Headphones
- Headsets

Block Diagram



Ordering Information

Product	Part Number
Snapdragon S5 Gen 1 Sound Platform	QCC-5229-0

Related Products

The **Qualcomm® QCC5100 Series Bluetooth Audio SoCs** are extremely low-power, premium-tier processors designed for compact, feature-rich wireless earbuds, headsets, and speakers.

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