SNAPDRAGON® S7 AND SNAPDRAGON S7+ GEN 1 SOUND PLATFORMS

Sound reimagined. The Snapdragon S7 Sound Platforms have been designed to unlock a new tier of premium audio performance.

The Snapdragon S7 and Snapdragon S7+ Gen 1 Sound Platforms deliver six times more compute power, and almost 100 times more AI power than previous generation platforms, with advanced connectivity options and Snapdragon Sound Technology Suite, in an ultra-low power architecture. They have been designed to deliver a new premium tier of performance unlike anything listeners have heard before.

The Snapdragon S7+ Platform also includes a world-class Wi-Fi solution that will extend the capability and range of audio devices far beyond what is possible with only Bluetooth, while maintaining the ultra-low power performance we have come to expect from earbuds and headsets. To do this, we have utilized our rich heritage and expertise in Wi-Fi connectivity to deliver a dedicated Wi-Fi solution for earbuds and headphones.

The Snapdragon S7+ Sound Platform (Qualcomm® QCC7226 + Qualcomm QCP7321) is the first to support micro-power Wi-Fi connectivity and our revolutionary new Qualcomm® Expanded Personal Area Network (XPAN) which transforms the sound experience by enabling whole home and building coverage, supporting up to 192kHz lossless music streaming and enhanced sound for gaming with spatial audio.

Powerful on-device AI and the Qualcomm® Neural Network Accelerator enables a step-change in concurrent processing at ultra-low power. Working in conjunction with Active Noise Cancellation and Personal Sound Amplification technologies, the on-device AI enables earbuds and headsets to become much more responsive to listener needs, environment, and preferences as they transition throughout their day.

In addition to this, the platform is packed with premium audio technologies, including Qualcomm® 4th Gen Adaptive Active Noise Cancellation (ANC) and fully programmable, low-latency DSP to provide powerful ANC, as well as enabling hearing loss compensation and personal sound amplification products.

Highlights

A new tier of audio performance

These platforms have a completely new architecture with more powerful compute, a dedicated Qualcomm® Micro NPU AI engine, multiple DSP Cores, and a sensor hub, supported by a 300% increase in memory*.

* Compared to previous generations

Qualcomm XPAN Technology

A revolutionary new connectivity technology that works with Snapdragon Sound to keep your earbuds connected even when your phone is in another room, or on another floor of your building. With Snapdragon Sound and Qualcomm XPAN Technology, the Snapdragon S7+ Sound Platform brings high bit-rate audiophile music streaming, delivered over Wi-Fi at power consumption levels suitable even for earbuds, so you can listen at ultra-low power and hear every detail of your music in stunning lossless quality (from 92kHz scaling up to 192kHz).

Superior hearing enhancement

The platforms utilize on-device AI to help hearing enhancement technologies deliver a more seamless user experience by understanding and adapting to user needs throughout the day. For example, by using on-device AI learning, the ANC can transition virtually seamlessly and intelligently between ANC modes based on immediate environment.

Qualcomm 4th Gen Adaptive ANC

An all-new platform hardware architecture supports low-latency, multi-channel, and low-power 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 also automatically and dynamically adapts to provide strong ANC performance based on different variables, including variations in fit, whether the earbud becomes loose in the ear as you move, or whether the noise suddenly changes in your environment. Transparency mode is supported for situations where you need to let sounds from the outside world in, and the ANC will automatically and virtually seamless transition between modes.

Snapdragon S7 Sound Platforms

Designed to unlock a new tier of audio performance

Features Comparison	Qualcomm XPAN Technology	Lossless Audio (48kHz)	Lossless Audio (96kHz)	Gaming Mode	Compute	Audio Curation
Snapdragon S7+ Gen 1 (QCC7226 + QCP7321)	Yes	Classic Bluetooth, LE Audio, Qualcomm XPAN Technology	Qualcomm XPAN Technology	Classic Bluetooth, LE Audio, Qualcomm XPAN Technology	**AI:** Qualcomm eNPU 64 GOPS **DSP:** 2x 500 MHz + 1x 250 MHz **RAM:** 10.6 MB	Qualcomm 4th Gen Adaptive ANC, Low-latency DSP
Snapdragon S7 Gen 1 (QCC7226)	No	Classic Bluetooth, LE Audio	No	Classic Bluetooth, LE Audio	**AI:** Qualcomm eNPU 64 GOPS **DSP:** 2x 500 MHz + 1x 250 MHz **RAM:** 10.6 MB	Qualcomm 4th Gen Adaptive ANC, Low-latency DSP
Snapdragon S5 Gen 1 Sound Platform	No	Classic Bluetooth, LE Audio	No	Classic Bluetooth, LE Audio	**DSP:** 2x 240 MHz **RAM:** 2.64 MB	Qualcomm 3rd Gen Adaptive ANC

Features

- All new platform architecture unlocks a new tier of performance, maintaining ultra-low power performance
- Almost 100x more AI power than previous generation platforms
- 3x more memory than the Qualcomm® S5 Gen 2 Sound Platform
- A step-change in DSP – 1.5 GHz total audio compute (50%+ improvement on previous Qualcomm S5 Gen 2 Sound Platform)
- Dedicated AI core to provide higher performance and lower power 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 Active Noise Cancellation 112 biQuad filters combined with fully programmable 3uSec low latency DSP to enable personalized and responsive audio curation
- Bluetooth 5.4 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, and external supply support
- High-performance audio combined with low power consumption, designed for Snapdragon Sound

Snapdragon S7+ Gen 1 Sound Platform Additional Features

- Support for Wi-Fi connectivity at micro-power
- Support for whole home and building coverage with Qualcomm XPAN Technology
- Seamless transitions to Wi-Fi from Bluetooth
- Data rates of up to 29 Mbps supporting Snapdragon Sound and delivering up to 24-bit 192kHz lossless music streaming over Wi-Fi

To learn more visit: qualcomm.com

Snapdragon

Snapdragon S7+ Gen 1 Block Diagram

Ordering Information

For more information about the Snapdragon S7 Sound Platforms, please contact a Qualcomm Technologies sales representative.

Related Products

Experience Qualcomm Technologies' line of Sound Platforms with their exceptional quality and power efficiency:

Snapdragon S5 Gen 1 Sound Platform