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Qualcomm

Qualcomm® CSR8675 Bluetooth Audio Platform

**Premium tier Bluetooth® audio flash platform
with support for Qualcomm® aptX™ HD
Audio and active noise cancellation***

CSR8675 is a premium tier single-chip solution in our CSR86xx Bluetooth audio SoC portfolio designed to deliver high quality wireless audio performance and support development of highly differentiated premium wireless audio products.

CSR8675 is part of the CSR86xx portfolio, a range of silicon platforms for wireless audio applications which integrate a dual-mode Bluetooth radio, a low power DSP, an application processor, a battery charger, memory and various audio and hardware interfaces into a single-chip solution.

The CSR8675 SoC also integrates a dedicated active noise cancellation* block for earbud and headphone applications, and a 120Mhz Qualcomm® Kalimba™ DSP, which allows support for 24-bit audio over Bluetooth and aptX HD making it an ideal choice for premium audio products.

There is comprehensive Audio Development Kit (ADK) software for CSR8675 which includes Bluetooth applications, voice and music technologies and tuning tools for reference headset and speaker applications and supports developers with greater differentiation capabilities in a single-chip design.

* Available via separate software download. Requires ADK software and separate licenses. (Subject to change)

Solution Highlights

Integrated single-chip solution for smaller designs

Application processor, Bluetooth and Bluetooth low energy radios, DSP and memory integrated into a single SoC helps reduce system complexity and eBOM while supporting small form factor designs.



Comprehensive ADK software support for easy application development

The software development environment with integrated Bluetooth and audio applications, reference designs and tuning tools supports reduced development time.



Active noise cancellation* designed to reduce ambient noise

Hardware-based feed-forward active noise cancellation technology designed to reduce distracting background noise.



aptX HD for a high-definition audio experience

Optional support for 24-bit audio and aptX HD for high resolution audio performance that is comparable to wired.





Bluetooth Audio Flash Applications

- Speakerphones
- Stereo Speakers
- Stereo Headphones
- Stereo Headsets
- Wireless Earbuds
- Soundbars



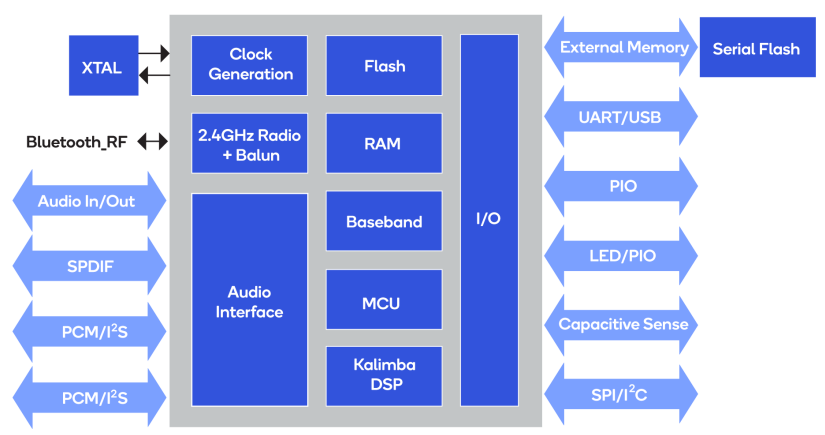
Features

- Bluetooth version 4.2 compliant
- 120 MHz programmable Kalimba DSP with integrated multipoint A2DP and HFP audio applications
- aptX, aptX Low Latency, aptX HD, MP3, AAC and SBC audio codecs
- 2-mic Qualcomm® cVc™ 8th Generation Noise Cancellation Technology with wideband speech
- Audio tuning suite with audio enhancements and two 5-band EQs
- GAIA V2 and associated Android & iOS example apps for enhanced connectivity with mobile devices
- Link Layer Topology support for enhanced multi-device co-existence
- Qualcomm TrueWireless™ Stereo
- Two I²S ports for enhanced audio connectivity capabilities with external components
- Support for Apple MFi¹ & Apple ANCS for enhanced communication with iOS devices
- Qualcomm® meloD™ Audio Processing stereo widening technology
- Compatible with third party solutions available from selected eXtension Program members

¹ Customer will need an MFi license.

Product	Part Number
CSR8675 BGA	CSR8675C-IBBH-R
CSR8675 WLCSP	CSR8675C-ICXT-R
CSR8675 BGA Dev Kit	DK-CSR8675-10197-2A
CSR8675 BGA Dev Board	DB-CSR8675-10200-2A
CSR8675 WLCSP Dev Kit	DK-CSR8675-10198-1A
CSR8675 WLCSP Dev Board	DB-CSR8675-10201-1A

CSR8675 Block Diagram



CSR8675 Specifications

Bluetooth	Integrated dual-mode radio and balun (50 Ω) -90dBm receiver sensitivity; +10dBm transmitter Bluetooth v4.2 firmware Support for various profiles including: HFP 1.6, A2DP 1.3.1, AVRCP 1.6, HOGP 1.0, FMP 1.0, PXP 1.0, BAS 1.0, TPS 1.0
MCU	80MHz programmable RISC processor
Audio	Programmable 24-bit fixed-point 120MHz Kalimba DSP 2x single-cycle MACs; 24 x 24-bit multiply & 56-bit accumulator
Battery Support & Power Management	Li-Ion battery charger supporting up to 200mA 2x high-efficiency switch-mode regulators with 1.8V and 1.35V outputs from battery supply
Audio Interfaces	Stereo 24-bit ADC; up to 96kHz sampling frequency Stereo 24-bit DAC; up to 192kHz sampling frequency Microphone inputs: up to 2x analog & 6x digital (MEMS)
Physical Interfaces	2x PCM/I ² S & 1x SPDIF with 24-bit support Up to 29x PIOs, including 14x GPIOs, USB2.0, I ² C, SPI, UART 3x LED controllers; support for up to 6x touch sensor inputs
Memory	Integrated 16Mb programmable flash memory with support for up to 64Mb external SPI FLASH 56kB system MCU RAM 64k x 24-bit data & 12k x 32bits program memory for DSP
Packaging	6.5 x 6.5 x 1mm, 0.5mm pitch 112-ball VFBGA or 4.84 x 4.84 x 0.6mm, 0.5mm pitch 79-ball WLCSP

Qualcomm cVc, Qualcomm meloD, GAIA and Qualcomm TrueWireless Stereo are products of Qualcomm Technologies, Inc. and/or its subsidiaries. eXtension is a program of Qualcomm Technologies, Inc. and/or its subsidiaries.

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