QUALCOMM®

Qualcomm® BlueCore™ Audio Platform

CSR8675

Premium tier single-chip Bluetooth® audio solution with support for Qualcomm® aptX™ HD and active noise-cancelling

Programmable Bluetooth dual-mode System on Chip (SoC)

CSR8675 is a premium tier single-chip solution in our CSR86xx Bluetooth audio SoC portfolio delivering high quality wireless audio performance and supporting 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-cancelling** 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.
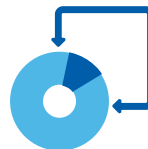
The Audio Development Kit (ADK)* software for CSR8675 includes Bluetooth applications, voice and music technologies and tuning tools for reference headset and speaker applications and supports developers with greater differentiation capabilities in a single-chip design.

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*

Software development environment with integrated Bluetooth and audio applications, reference designs and tuning tools to help reduce development time.

Active noise-cancelling** designed to reduce ambient noise

Hardware-based feed-forward active noise-cancelling 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.

Speakerphones **Stereo Speakers** **Stereo Headphones** **Stereo Headsets** **TrueWireless Earbuds** **Soundbars**
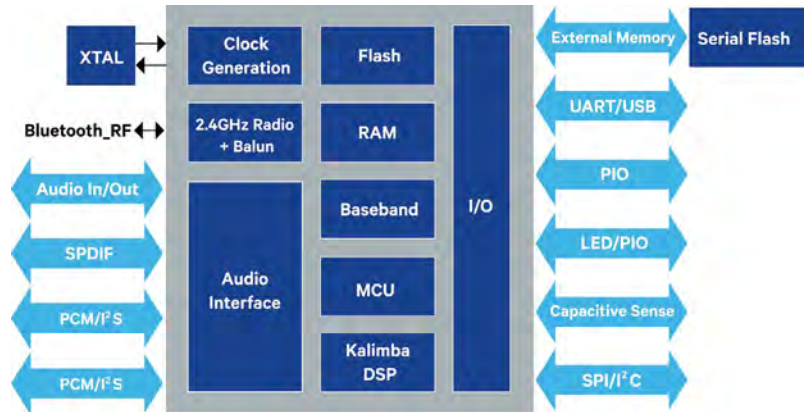
Features

- 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 voice processing 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 I^{2}S ports for enhanced audio connectivity capabilities with external components
- Support for Apple MFi & Apple ANCS for enhanced communication with iOS devices*
- Qualcomm® meloD™ stereo widening technology*
- Compatible with third party solutions available from our selected eXtension program members*
- CSR8675 BGA application boards backward compatible with CSR8670 BGA

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

To learn more visit:
qualcomm.com or
developer.qualcomm.com

CSR8675 Block Diagram

CSR8675 Specifications

Bluetooth	Integrated dual-mode radio and balun (50 Ω) -90dBm receiver sensitivity; +10dBm transmitter Fully qualified 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 & 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 16Mbit programmable flash memory with support for up to 64Mbit external SPI FLASH 56kB system MCU RAM 64k x 24-bit data and 12k x 32bits program memory
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

* Requires ADK software and separate licenses.
** Available in 2017 via separate software download. Requires ADK software and separate licenses. (Subject to change)

Qualcomm cVc, Qualcomm meloD and Qualcomm TrueWireless Stereo are products of Qualcomm Technologies International, Ltd.

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