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.

High-performance audio with aptX technology

aptX audio technology supports high-quality wireless audio, bringing pro-audio quality to consumer electronic devices.

Unique audio features available through eXtension Program

The CSR8670 audio platform is compatible with a large range of third party audio technologies from our eXtension Program members including music enhancement, voice processing and voice recognition.
Features

- Bluetooth version 4.2 compliant
- 80MHz programmable Qualcomm® Kalimba™ DSP with integrated multipoint A2DP and HFP audio applications
- aptX, aptX Low Latency, MP3, AAC and SBC audio codecs
- 2-mic 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
- Stereo ADC with 2 microphone inputs and one line input; support for up to 6 digital microphones; stereo DAC
- Qualcomm TrueWireless stereo
- Support for Apple MFi¹ & Apple ANC for enhanced communication with iOS devices
- Qualcomm® meloD™ Audio Processing stereo widening technology
- Compatible with third party solutions available from selected eXtension Program members

CSR8670 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 1.1

MCU

- 80MHz programmable RISC processor

Audio

- Programmable 24-bit fixed-point 80MHz Kalimba DSP
- 2x single-cycle MACs; 24x24-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 16-bit ADC; up to 48kHz sampling frequency
- Stereo 16-bit DAC; up to 96kHz sampling frequency
- Microphone inputs: up to 2x analog & 6x digital (MEMS)

Physical Interfaces

- 2x PCM/1’S & 1x SPDIF with 24-bit support
- Up to 29x PIOs, including 14x GPIOs, USB2.0, I2C, 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 FVFBGA or 4.73 x 4.84 x 0.6mm, 0.5mm pitch 79-ball WLCSP

¹ Customer will need an MFi license.