

Qualcomm

# Qualcomm® QCC302x/QCC303x Series Bluetooth Audio SoCs

**Ultra low-power Bluetooth audio SoCs optimized for compact, feature-optimised wireless earbuds, hearables and speakers.**

The QCC302x and QCC303x SoC series is a family of flash programmable Bluetooth® audio System-on-Chips (SoCs) based on an ultra-low power architecture and optimized for use in compact, feature-optimised, affordable wireless earbuds, hearables, headsets and speakers.

These SoCs are engineered to help deliver extraordinary audio quality while significantly improving battery life in next-generation devices, by helping to reduce power consumption by up to 50 percent compared to previous generation entry-level devices.

The flexibility provided by the flash programmable applications processor and configurable audio digital signal processors (DSPs), helps manufacturers to easily differentiate products with new features without extended development cycles.

The QCC302x/QCC303x series bring together an array of Qualcomm Technologies' innovations designed to deliver an outstanding yet affordable user experience and expand the availability of wireless headsets, earbuds and speakers including entry-level and mid-tier offerings.



## Highlights

### Powerful tri-core processing designed to support flexible innovation

Tri-core processing is delivered by two dedicated configurable 32-bit application processor subsystems and a single Qualcomm® Kalimba™ DSP audio subsystem, and is designed to support freedom and flexibility for innovation. A new feature rich audio development kit (ADK) and enhanced development tools are designed to help reduce time needed for integration and commercialization.



### Advanced array of audio technologies

Includes support for Qualcomm® aptX™ audio technology, designed to help create consistent, high-quality audio streaming over Bluetooth, as well as, Qualcomm® cVc™ Noise Cancellation Technology to help suppress background noise and echo feedback for a quieter and more seamless user experience.



### Enhanced Qualcomm TrueWireless™ Stereo functionality

Qualcomm TrueWireless™ technology supports a truly wire-free listening experience, including robust overall connectivity when making calls and listening to music, an easier pairing experience and balanced power distribution between earbuds for longer usage time.



### Digital Assistant ready

Support for voice services is available via button-press activation. This feature is designed to relay the audio stream and voice control capabilities to a handset to process and execute commands.



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QCC302x/3x

## Bluetooth Audio Applications

- Truly Wireless Earbuds
- Bluetooth Stereo Headphones or Headsets
- Bluetooth Stereo Portable Speakers



## QCC302x/QCC303x Features Comparison



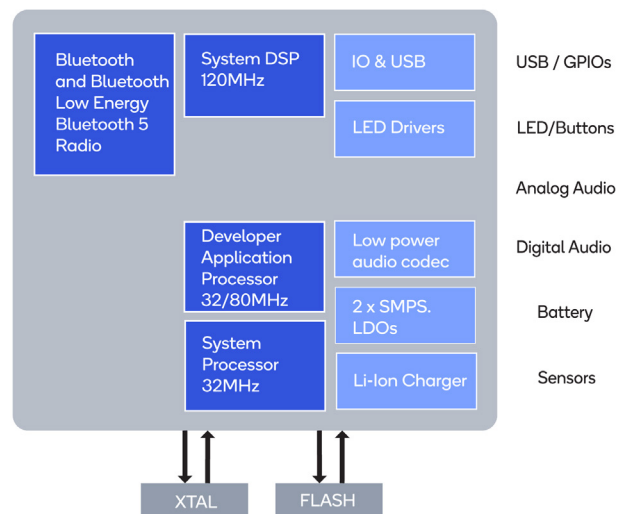
	Stereo Headset	Mono Headset TWS/TWS+*	Mono aptX	Stereo aptX & aptX HD Headset	1-mic cVc	2-mic cVc	Broadcast Audio	Stereo Speaker	Stereo Speaker TWS/TWS+*	Stereo aptX Speaker	1-mic cVc	Broadcast Audio	Package	Pins/Balls-Pitch
QCC3026		YES	YES		YES	YES	YES						WLCSP 3.98x4.02x0.54MM	81-0.4mm
QCC3020		YES	YES		YES	YES	YES						BGA 5.5x5.5x0.1mm	90-0.5mm
QCC3024	YES				YES	YES	YES						BGA 5.5x5.5x0.1mm	90-0.5mm
QCC3034	YES			YES	YES	YES	YES						BGA 5.5x5.5x0.1mm	90-0.5mm
QCC3021								YES	YES		YES	YES	QFN 8x8x0.85mm	80-0.35mm
QCC3031								YES	YES	YES	YES	YES	QFN 8x8x0.85mm	80-0.35mm

\* TWS/TWS+ = Qualcomm TrueWireless and Qualcomm TrueWireless Plus

## Features

- Same low-power performance as QCC512x
- Mono devices (QCC3020/QCC3026) optimized for Qualcomm TrueWireless Stereo and Qualcomm TrueWireless Stereo Plus
- Stereo devices (QCC3024/QCC3034) optimized for Bluetooth stereo headsets/headphones or for Bluetooth sport headsets
- Stereo devices (QCC3021/QCC3031) optimized for Bluetooth stereo speakers
- Bluetooth 5 radio
- 2 Mbps Bluetooth low energy support
- Ultra-small form factor
- Powerful tri-core processor architecture
  - Dual core 32-bit processor application subsystem
  - Single core 120Mhz Kalimba DSP audio subsystem (runs from ROM)
- High performance, low-power audio
- 2-ch 98dBA headset class D
- 2-ch 99dBA line inputs (single ended)
- 24-bit audio interfaces

## QCC302x/QCC303x Block Diagram



## Ordering Information

Product	Part Number	Product	Part Number
QCC3020	QCC3020-0-CSP90	QCC3026	QCC3026-0-81WLN5P
QCC3021	QCC3021-0-80PQFN	QCC3031	QCC3031-0-80PQFN
QCC3024	QCC3024-0-CSP90	QCC3034	QCC3034-0-CSP90

QCC3020, QCC3021, QCC3024, QCC3026, QCC3031 and QCC3034 are products of Qualcomm Technologies, Inc. and/or its subsidiaries.

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