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.
Home Entertainment

Toys

QCC302x/QCC303x Features Comparison

<table>
<thead>
<tr>
<th>Stereo Headset</th>
<th>Mono Headset TWS/TWS+</th>
<th>Mono aptX</th>
<th>Mono aptX &amp; aptX HD Headset</th>
<th>1-mic eVo</th>
<th>2-mic eVo</th>
<th>Broadcast Audio</th>
<th>Stereo Speaker</th>
<th>Stereo Speaker TWS/TWS+</th>
<th>Stereo aptX Speaker</th>
<th>1-mic eVo</th>
<th>Broadcast Audio</th>
<th>Package</th>
<th>Pins/Balls-Pitch</th>
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<td>90 – 0.5mm</td>
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<td>QFN 8x8x0.85mm</td>
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* 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

To learn more visit: qualcomm.com or createpoint.qti.qualcomm.com

Bluetooth Audio Applications

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

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QCC302x/QCC303x Block Diagram

QCC302x/QCC303x Block Diagram

Ordering Information

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<th>Product</th>
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