Qualcomm

Qualcomm® Smart Headset Reference Design for Amazon Alexa Voice Services (AVS)

The Qualcomm Smart Headset Reference Design for Amazon AVS is designed to help manufacturers evaluate Alexa on-the-go with a mobile phone headset solution.

The process of developing a smart headset that meets high consumer expectations is complex and challenging, requiring the integration of an array of features and advanced capabilities. The Qualcomm® Smart Headset Platform is designed specifically to help reduce time to market and streamline the process for developing advanced Bluetooth headsets, to help manufacturers participate in the growing smart headset opportunity.

The Qualcomm Smart Headset Reference Design for Amazon AVS is based on Qualcomm Technologies' advanced Bluetooth® Audio SoC, QCC5124, which combines ultra-low-power consumption, to help extend playback time and battery life, and Qualcomm® cVc™ noise reduction technology, to support active noise cancellation and superior audio quality while on a voice call. Manufacturers can add Qualcomm® aptX™ HD audio designed for high-resolution wireless audio.

The Qualcomm Smart Headset Reference Design is the first available end-to-end design that supports Bluetooth wireless technology and push-button activation for Alexa on an Android phone with the Alexa app installed. It can be used by manufacturers to help evaluate Alexa on-the-go with a mobile phone.

Following evaluation via this Reference Design, manufacturers can then step up to the full development environment with a comprehensive suite of software and tools to customize or develop their own headset products.

Qualcomm Smart Headset Reference Design for Amazon AVS

Included with the reference design:
- Occluded earbuds with ear interface rubbers
- QCC5124 BGA90, 1x in right side
- Flexy rigid PCB design in both sides
- 2-mic cVc voice echo noise cancellation right side
- 60mA battery per side
- Micro USB charging – right side
- Software binary image - ADK based Stereo Sink application supporting Amazon AVS
- Detailed hardware design pack available

Qualcomm Smart Headset Development Kit for Amazon AVS

The Qualcomm® Smart Headset Development Kit for Amazon AVS is designed to provide the hardware and software components needed to help manufacturers overcome common and significant design challenges caused by the small form factors and low power requirements of smart headsets. Using this development kit, manufacturers should be able to commercialize their own products quickly and more cost-effectively.

Custom development of the Qualcommm Smart Headset Reference Design is possible with the Qualcomm® Bluetooth Developer License. Additional development products include the Qualcomm® Open Board Development Kit along with a Transaction Bridge.

Qualcomm
smart headset
platform

- Qualcomm Smart Headset Reference Design
  for Amazon Alexa Voice Service (AVS)

- Qualcomm Smart Headset Development Kit
  for Amazon Alexa Voice Service (AVS)

alexa

Features

- Based on QCC5124 Bluetooth Audio SoC with powerful quad-core processor architecture

- Ultra-low-power consumption for extended playback time and battery life

- Qualcomm Bluetooth Developer License available for custom designs

- 2-mic cVc noise reduction technology for superior audio when in a voice call

- Single chip Bluetooth containing the power management, audio DSPs, application processor, Bluetooth RF, GPIO and audio inputs and outputs

- Class A/B direct drive of the speakers

- Supports the Amazon Mobile Accessory protocol for seamless integration with the Google Play store Amazon Alexa application

- 4-button control and LED user interface

- 13mm speakers to handle low frequency audio to support full range frequency response audio play back

- Ear interface rubbers supplied in small, medium and large sizes

Ordering Information

Available to purchase through Digi-Key Electronics   **www.digikey.com**

Qualcomm Smart Headset Reference Design for Amazon AVS:
Part number: DK-QCC5124-AVSHS-A-0-ND

Qualcomm Smart Headset Development Kit for Amazon AVS:

Qualcomm Bluetooth Developer License
Part number: DL-BDEV-10002-1A-ND

The purchase of an open board development kit is recommended, but not essential.
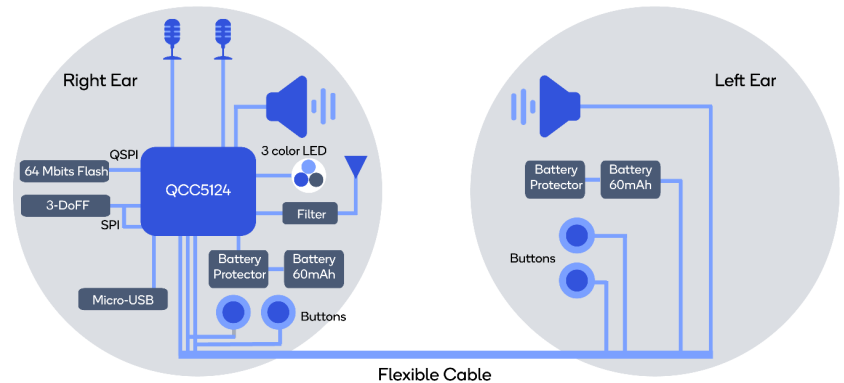
Qualcomm Open Board Development Kit
Part number: DK-QCC5124-VFBGA90-A-0-ND

Programming the open board development kit requires use of a Transaction Bridge which is not included in the Open Board Development Kit.

Transaction Bridge
Part number: DK-TRBI200-CE684-1-ND

Block Diagram

Qualcomm Smart Headset Development Kit for Amazon AVS

The Qualcomm Smart Headset Development Kit for Amazon AVS is the first to support Alexa Mobile Accessory Kit (AMA), a protocol that runs over Bluetooth wireless technology and enables users to easily connect their Bluetooth-enabled audio devices with Alexa using the Alexa Mobile App on Android or iOS devices. This means device makers no longer need to integrate with AVS or add any communication hardware beyond Bluetooth, which reduces cost and accelerates time to market. At a high level, AMA enables AVS to send speech from the accessory to the Alexa service and a control service for exchanging control messages between the accessory and the Alexa Mobile app.

For more detailed hardware development, the Open Board Development Kit can be purchased along with a Transaction Bridge for debugging.

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