Product Highlights

**High-performance, single-chip solution for premium audio**

A highly integrated SoC designed to support superior sound quality, with a fully qualified dual-mode Bluetooth 5 radio, integrated NFC, multi-processor subsystems, integrated power management and multiple advanced audio interfaces.

**Offers 4x more DSP processing power than our CSR8675 premium SoC**

Dual 240MHz Kalimba audio DSPs include a new ability for the DSP to dynamically reconfigure at runtime, and eliminate the need for external audio processing.

**Flash-programmable memory for more flexibility**

A dedicated 120MHz 32-bit OEM application processor is designed to provide programming resources and freedom for developing proprietary features.

**Next gen ADK software designed to support ease of development**

CSRA68105 comes with the next generation ADK 6 and features a comprehensive suite of software tools designed to support the development of audio applications and the configuration of sophisticated audio processing chains. ADK 6 includes a SIG-qualified Bluetooth stack, helping to reduce end-product development time, and improve ease of customisation.
Features

- Powerful quad-core processor architecture
  - Dedicated 120MHz 32-bit processor application subsystem
  - Dual-core 240MHz Kalimba DSP Audio subsystem
  - DSPs support downloadable capabilities from RAM/QSPI and pre-installed library functions from ROM
  - Further system processor with embedded Bluetooth protocol stack
  - Embedded ROM + RAM and external QSPI Flash
- Variety of high definition audio interfaces
  - 2-ch 24-bit 109dBA line outputs
  - 2-ch 24-bit 100dBA line inputs
  - 2-ch 24-bit 96dBA class-H ground referenced headphone driver
  - 8-ch 108dBA PWM speaker outputs
  - 4x 384kHz 24-bit I²S
  - 4x 96kHz 24-bit SPDIF interfaces
- Integrated Bluetooth 5 and NFC tag radios
  - Dual-mode Bluetooth BR/EDR and Bluetooth Low Energy
- Pin-to-pin compatible with CSRA68100
- Advanced power management with integrated SMPS & Li-Ion battery charger with USB type-C charger support
- Rich array of interfaces including LED drivers and capacitive touch

Ordering Information

<table>
<thead>
<tr>
<th>Product</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSRA68105 Dev Kit</td>
<td>DK-CSRA68105-TFBGA213-A-0</td>
</tr>
<tr>
<td>CSRA68105 Module</td>
<td>DB-CSRA68105-TFBGA213-A-0</td>
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<tr>
<td>CDA Base Board &amp; Ancillaries Kit</td>
<td>DK-CDA-BASE-BARD-A-0</td>
</tr>
<tr>
<td>TRB200 Debugger</td>
<td>DK-TRB200-CE684-1</td>
</tr>
</tbody>
</table>

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

CSRA68105 Block Diagram

CSRA68105 Specifications

Bluetooth
- Integrated dual-mode radio and balun (50 Ω)
- Up to -91 dBm receiver sensitivity, +115dBm transmit power
- Bluetooth v5.0, Bluetooth Class 1 or 2 support

NFC
- Integrated NFC Radio w/ NFC Forum static handover for Bluetooth NFC Forum Tag Type 2 emulation, Peer-to-Peer Listener mode

Applications Subsystem
- 32-bit 120MHz programmable developer processor dedicated to customer applications
- 32-bit 120MHz firmware processor for system

Audio Subsystem
- 2x programmable 32-bit fixed-point 240MHz Kalimba DSPs, 192KB program RAM at 240MHz, 512KB data RAM

Battery Support & Power Management
- Integrated Li-Ion battery charger supporting up to 200mA for internal mode and up to 1.8 A in external mode

Audio Interfaces
- 2x high-quality line level ADCs, 2x low-power ADCs with microphone pre-amp & bias, Up to 8x digital microphones, 2x high-quality line level DACs, 2x low-power headphone drivers, SPDIF 4x input, 4x output, 4x I²S up to 192kHz

Physical Interfaces
- UART, BitSerialiser SPI & I²C, USB Host & USB Device, SDIO v3.0, 63x PIOs, 8x LEDs with PWM, 13 XIO, Capacitive Touch, 12-bit ADC, 10-bit DAC, Supporting external QSPI Flash parts up to 256 Mb

Packaging
- 213-ball 10 x 8 x 1.2mm, 0.5mm pitch TFBGA

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