Product Overview

LC823455: Low Power & High-Resolution Audio Processing System LSI for Portable Sound Solutions

For complete documentation, see the data sheet.

LC823455 is an audio processing System-on-Chip (SoC) for recording and playback with High-Resolution 32-bit & 192 kHz audio processing capability. It provides required key functions for Portable Sound Solutions which are; Dual CPU configuration, DSP providing intensive processing capability, 4316 KB of internal SRAM that supports the implementation of large-scale programs for WLAN applications, and multiple interfaces to extensively increase its connectivity. It features a broad range of functions including SBC/AAC codec and Active Noise Canceller applicable for wearable audio applications.

Features

- ARM® Cortex®-M3 Dual and Proprietary 32 bit DSP (LPDSP) Multi-Core system
- Internal 4316kB large SRAM for ARM® Cortex®-M3 Dual Core and proprietary 32 bit DSP
- Shorten ambient acoustic sound path
- Various proprietary DSP codes for audio processing: MP3 codec, SBC codec, FLAC codec, noise-cancelling, echo cancelling and so forth
- Hard wired audio functions:
  - ASRC (Asynchronous Sample Rate Converter)
  - Hardware mixer
  - EQ (6 band-Equalizer)
- Integrated analog functions:
  - 4 channels of Digital MIC PDM I/F
  - Low-power Class D HP amplifier
  - System PLL
  - dedicated audio PLL, ADC
- Various interfaces:
  - USB2.0 HS device
  - eMMC
  - SD card
  - SPI, I2C
- High resolution 32 bit & 192 kHz audio processing capable
- UART w/ DMA & FIFO support low power Bluetooth® audio
- Miniaturized 4.086mm square WLCSP package

  For more features, see the data sheet

Benefits

- 1-Chip solution lowers BOM cost
- No extra memory required for WLAN application
- Enabling ANC function
- DSP code's development cost reduction.
  Several DSP codes are available with no additional fee such as noise cancelling, echo cancelling and so forth
- Power saving by reducing CPU/DSP load
- Foot-print saving by reducing peripheral BOM count
- Multiple interfaces increase interface extensibility

Applications

- Portable Audio
- Wearable Audio
- Wireless Audio
- Voice User Interface (VUI)

End Products

- Sports headset w/ Bluetooth
- Wireless speaker w/ Bluetooth, WLAN
- Voice recorder
- Smart Home Appliance

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	DSP Core (bits)	Coprocessor Type	MIPS	Dynamic Range (dB)	RAM (kB)	$I_{standby}$ Typ (µA)	Audio Inputs	Audio Outputs	Package Type
LC823455XATBG	7.4665	Pb-free Halide free non AEC-Q and PPAP	Active	32		170				2	2	WLCSP-120

For more information please contact your local sales support at www.onsemi.com.

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