

BEYOND AC97 AUDIO CONTROLLER

Revision 2.3 Compliant Audio Controller

OVERVIEW

Beyond AC97 Audio Controller is fully run-time configurable IP core, enabling simple audio channel and slot setup, and can be optimized for specific application. Implemented to minimize audio data handling by System on Chip's processor the controller requires only setup of AC97 DMA engine, no external device is needed for AC97 to operate afterwards.

Beyond AC97 Audio Controller is designed to enable easy control of external AC97 CODECs using multi-port AMBA AXI / AHB / APB or WISHBONE SoC interconnect. External interface supports one external AC97 revision 2.3 compliant audio CODEC with 6 output (3 of them can be Double Rate Audio) and 3 input channels.

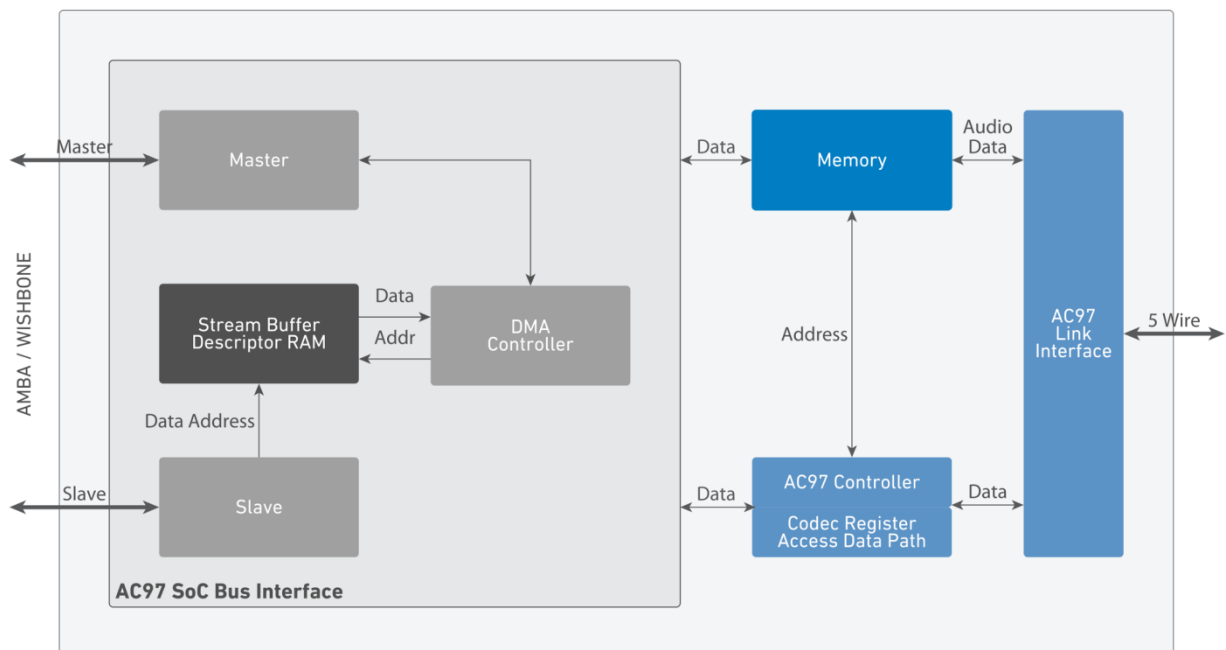
KEY BENEFITS

- Full use of AC97 features (bit rate, sample size and number of input/output channels)
- Integrated audio DMA engine to ease CPU load
- Can be optimized for specific application (logic/memory usage depends on maximum available audio slots/streams).
- Fully configurable audio channel/slot configuration

APPLICATIONS

- Embedded
- Portable and wireless
- Home entertainment consumer electronics

BLOCK DIAGRAM



FEATURES

Features

- Fixed 48kHz audio support
- Hardware variable 8kHz to 48kHz (up to 96kHz with Double Rate Audio enabled)
- Double Rate Audio support for Left, Right and Center channels
- 16, 18 and 20-bit sample size support
- Mono, stereo and multichannel (1, 2, 4 or 6 channels) audio output support
- Stereo Input and dedicated Mono microphone Input Channel support (all together 3 input channels)
- Power management support (individual subsections or full power-down mode)
- Full access to CODEC registers (tone, loudness, 3D stereo enhancement, etc.)

Memory Features

- System memory double-buffering supported
- Internal memory double-buffering supported
- Fully configurable internal memory support
- Configurable stream descriptor memory size

Supported SoC Bus Interfaces

The core is available with support for any of the following interconnect options:

- AMBA AXI / AHB / APB as appropriate
- AMBA AXI
- WISHBONE
- Other buses: for additional options please contact: sales@beyondsemi.com

Interface Features

- Can operate as Slave only audio controller (Master doesn't need to be connected)
- Integrated audio DMA engine using Master Interface
- Full audio stream/channel decoding (through DMA)
- All channels can be configured to use any stream and/or sub-stream data (including stereo channels)

RELATED PRODUCTS

- The [Beyond VGA Display Controller](#) IP Core provides VGA capabilities for embedded systems. It supports both CRT and LCD displays with user programmable resolutions, video timings and color depth, thus providing compatibility with large set of standard displays



Beyond Semiconductor is addressing challenges of systemic complexity in today's electronic devices, empowering its customers to create new experiences for end users.

Initially known for its processor expertise, Beyond quickly gained acceptance among top semiconductor companies and evolved into global company leveraging processing, software and system-wide view competence to provide its customers with effectively designed IP and ASICs.

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