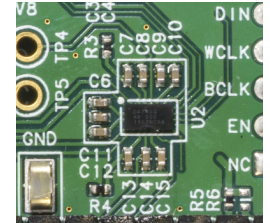


# SmartBeat™ DA7400 stereo hi-fi codec

## Outstanding audio and battery lifetime for Hi-Res audio and IoT systems

Today's consumers expect more from their audio systems. They should feel good, look great and last a longtime between battery charges / changes. And, of course, they must deliver outstanding audio. The SmartBeat™ DA7400 lets you create high-performance headphones, headsets and IoT devices to impress even the most demanding user. It offers industry-leading audio in a low-power, space-saving solution, helping enable longer playback times in more compact applications.



The SmartBeat™ DA7400 is a high-performance, ultra-low-power stereo hi-fi codec perfect for configurable headsets. With its integrated audio processor, the DA7400 delivers excellent audio performance including dynamic ranges for playback of 115 dB and sampling rates up to 384 kHz. It also offers 40 kHz audio bandwidth to support Hi-Res Audio.

Available in a choice of compact packages to meet the needs of even the most space-constrained applications. Moreover, it is part of a family of pin-compatible codecs, making it easier for you to develop a complete portfolio of headphone, headset and earbud solutions for any application.

### Applications

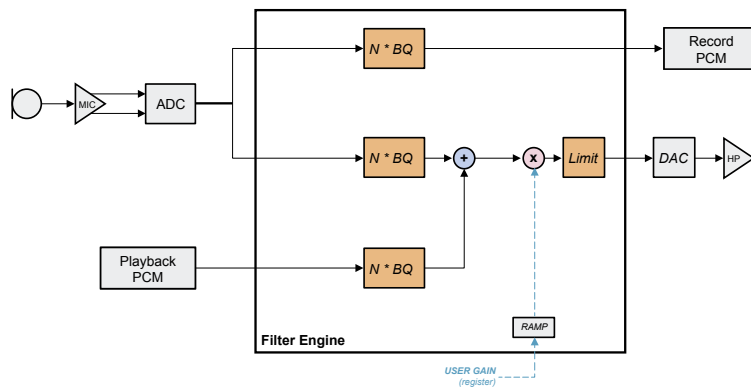
- Configurable headsets (Bluetooth / USB-C)
- IoT devices
- Consumer Hi-Res Audio systems

### Benefits

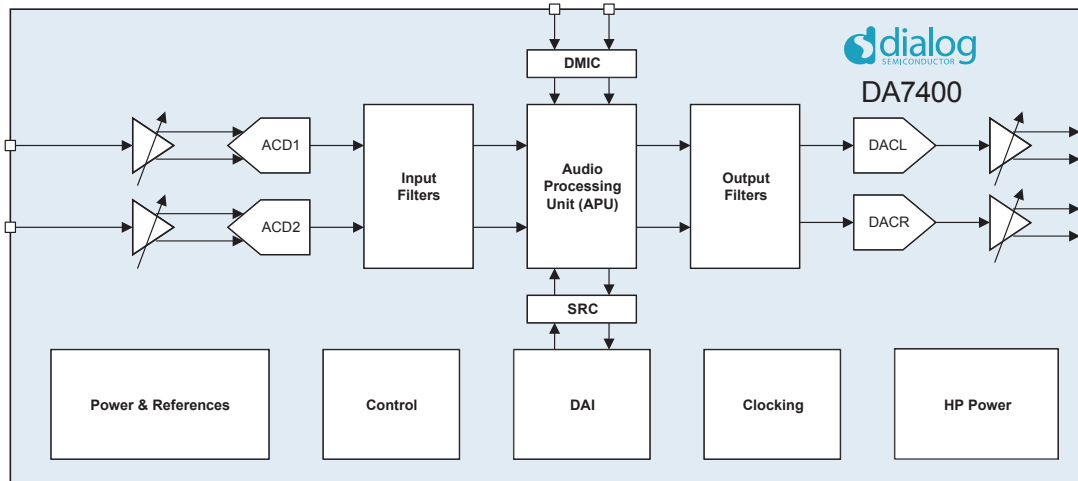
- Superior audio performance
- Class-leading low power consumption
- Highly compact footprint
- Minimal external component count
- Development kit including extensive tooling to speed up product development
- Family of pin-compatible variants



## DA7400 example configuration

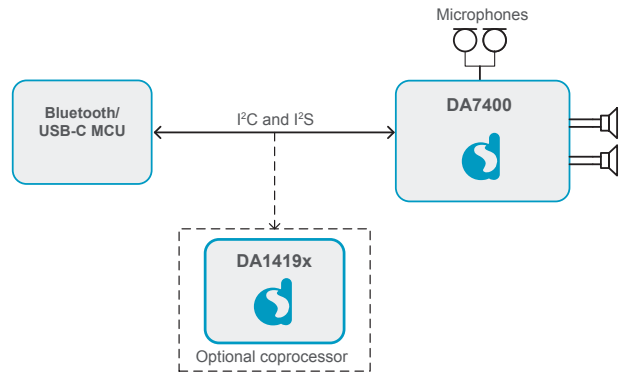


## Application example



## Tailored support

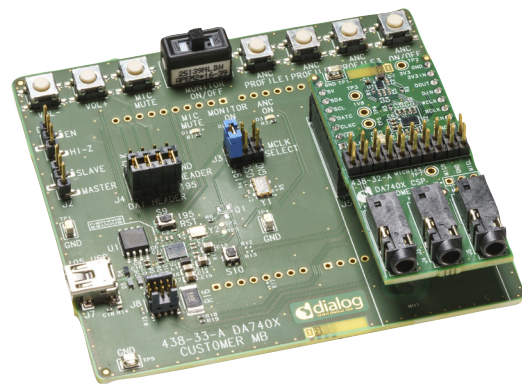
Dialog offers all the tools and support you need to develop new DA7400-based applications fast. This includes the option for hand-on support from experts in our audio labs in Europe and South East Asia



Typical application design

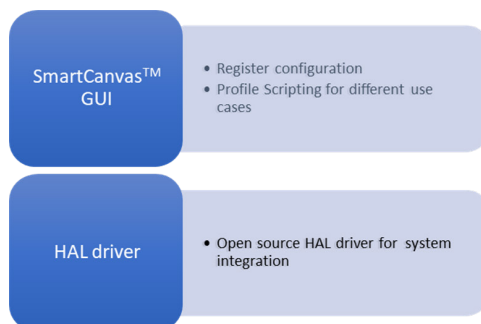
## Development kit

The DA7400 development kit contains all the hardware you need including motherboard with a DA14195 co-processor, and a daughterboard featuring the DA7400 in your choice of package.



## Development tools

We offer a range of software tools to enable the product development phase. A SmartCanvas™ GUI to configure registers and load profile scripts. An open source HAL driver is also available for system integration into the final product.



## Key features

- Enhanced audio performance
  - 115 dB playback dynamic range
  - 40 kHz bandwidth supports Hi-Res Audio
- Configurable filter engine
- 4-wire digital audio interface with support for I2S, TDM and other common audio formats
  - Up to 32 bits per channel
  - Up to 384 kHz sample rate support
- Three stereo PDM inputs for digital microphones and low latency connection from host processors
- Integrated low-noise microphone bias
- Flexible DSP supporting mixing, gain, equalization, sidetone, and automatic gain control
- Bypassable asynchronous sample-rate converters
- Clocking
  - Programmable fractional-N phase-locked loop (PLL)
  - Sample rate tracking
- 2-wire I2C compatible control interface
- WLCSP package:
  - 32-ball 3.26 mm x 1.72 mm, 0.4 mm pitch WLCSP

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