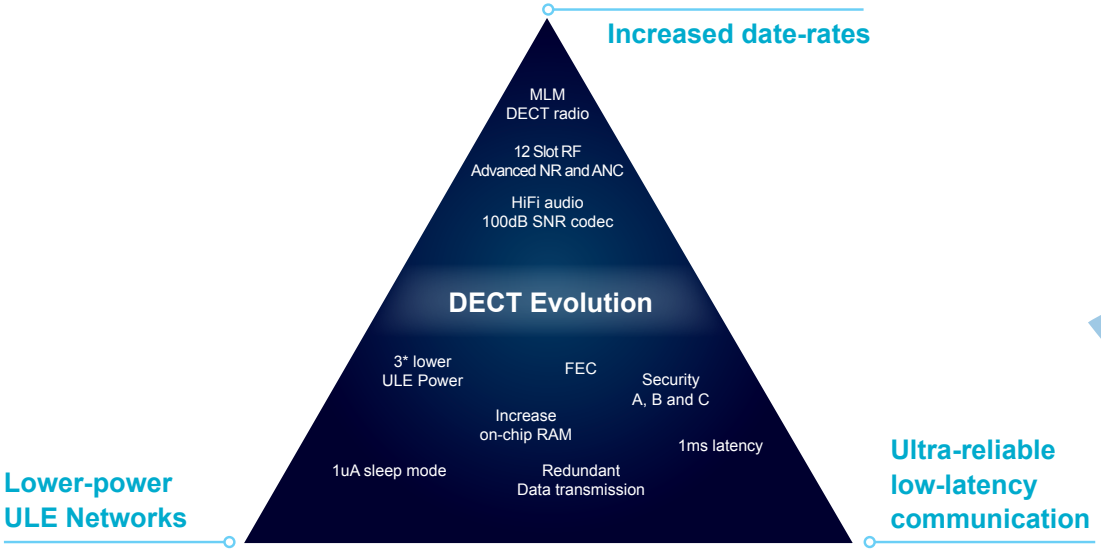
SmartBeat™ DA14495 low-power 1.9 GHz DECT evolution and audio solution

Ready for ultra-reliable and low-latency communication

Get technology-ready for the new evolution DECT standard with our advanced SmartBeat™ DA14495. It's ideal for new 1.9 GHz DECT interference free use cases in voice, audio and data. You can make significant improvements in new application fields, such as semi-professional audio devices like microphones and intercom systems, plus mission critical communication systems such as enterprise handsets and headsets. Furthermore, the DA14495's low power consumption and processing power for sensor fusion makes it perfect for ULE networks.



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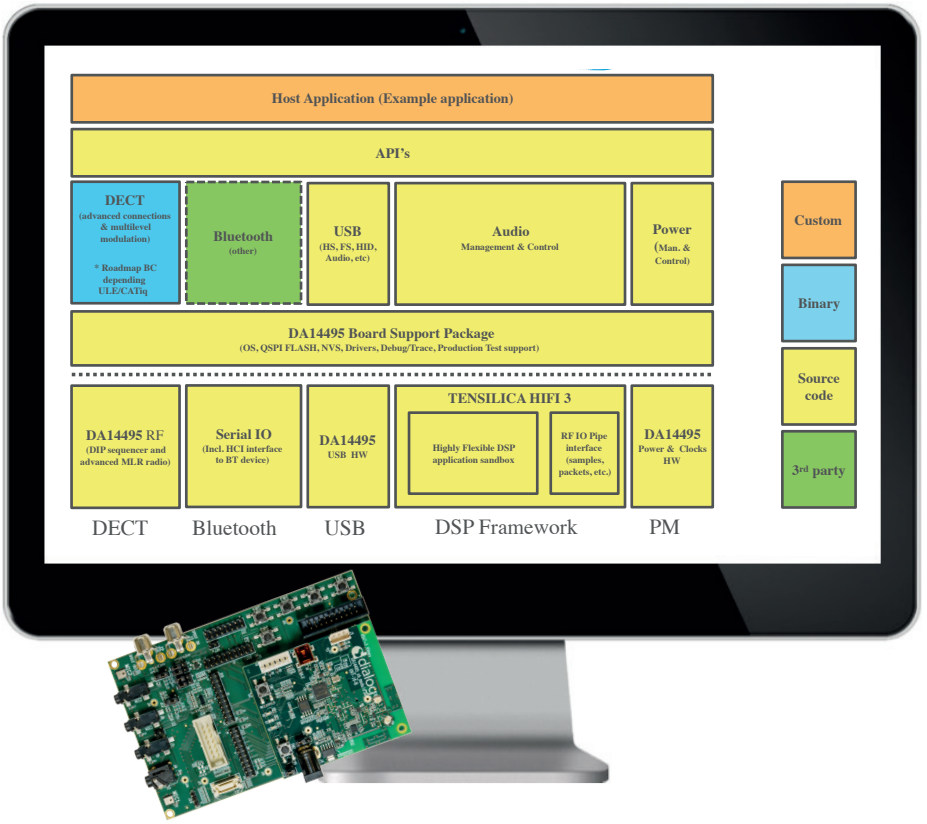
Modular and open software architecture

The DA14495's architectural layering and towering ensures a highly versatile and easily extendible software platform. It gives you all the building blocks you need plus the flexibility to create your own unique solutions. Power management is a core component, while the flexible audio API allows you to set up multiple streams independently. Software is available as source code, so can be fully customized. To maximize flexibility and customization, we offer a powerful yet compact embedded development kit. Furthermore a host of codecs, sound enhancements and other audio packages are available from Dialog and third parties.



A complete system solution

The DA14495 is an open audio platform that can be combined with any audio codec to create high-end digital applications like headphones and headsets. For example, it is the perfect partner for the Dialog DA7217. This advanced codec offers an outstanding power / performance ratio and includes a voice trigger function that can monitor for voice commands before waking up the DA14495 to start command interpretation.

The DA14495 is an open platform for high-end semiprofessional handsets, headsets or ULE networks. It combines extremely low power consumption with impressive processing performance in a small package. As a result, it allows you to develop attractive looking products that deliver top-end features such as ultra-reliable low latency communication, high density networks and voice control. It supports up to 6 mics for beam forming and active noice cancelling. Plus it handles high-end audio signals such as 192kHz, 32-bit PCM for the ultimate sound quality. Based on industry-standard IP, this powerful SoC makes the DECT evolution available today.

The new DA14495 silicon will give key benefits

The new DA14495 silicon	Key benefits
Increased density and spectral efficiency	Professional enterprise solutions and quality of service
Excellent high end audio quality	Enhanced customer user experience and new applications
Three times lower power products	Smaller batteries, smaller housing
Supports ULE product evolution	Sensors with longer range or running on coin cell batteries
Increased secure and reliability	Forward Error Correction, double slot diversity and security type A, B and C ready for a secure future
Large memory	Programming freedom and space for new applications

What does it mean for the Applications?

The new DA14495 silicon	Key benefits
Intercom systems	Superb Acoustic Echo Cancelling, excellent wideband audio, 12 slot multi-level RF for video/data solutions
Microphones	Benefit of no interference, run high performance sample based low latency codec's, supporting professional audio applications
Professional handset	Secure and reliable radio link with options to reduce latency and increase data-speed for mission critical applications
Headsets	Increased density, small form factor and enhanced audio experience. New features such as Digital Active Noise Cancelling and beamforming
Voice Controlled speaker	Always on voice trigger, command control in combination with far field beam forming microphones
Sensors	Opportunity to reduce 3 times the power consumption and battery life and run sensor fusion algorithms

Efficient processing power

The SmartBeat DA14495 integrates an efficient 32-bit ARM Cortex-M0 microcontroller and C-programmable 32-bit Cadence (Tensilica) HiFi 3 DSP. This combination ensures a small, low-power solution with all the performance necessary for high-end headphones offering outstanding sound quality and ambient noise cancellation. Moreover, the MCU speed can be scaled to further reduce power consumption, while the DSP is supported by a wide range of 3rd-party audio algorithms.

Flexible memory architecture

The DA14495's shared memory architecture comprises onboard cache, system RAM and DSP RAM. For maximum design flexibility, the MCU code (executed in place) and DSP code is stored in external QSPI Flash memory so you can tailor your memory costs to your application requirements.

Versatile power management

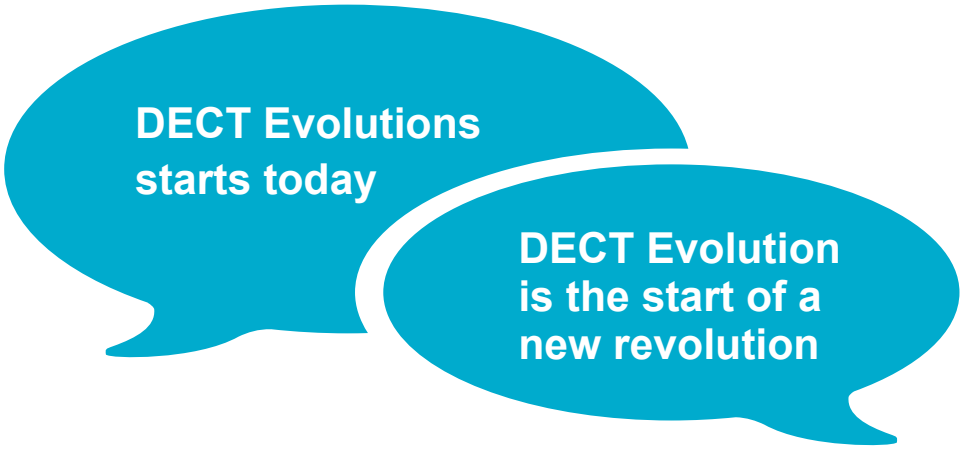
With its integrated step-down converter, the DA14495 can be powered directly from USB or by batteries ranging from 1.9 to 5 V. A high-precision fuel gauge maximizes battery lifetime and means users always know how much music time they have left. Meanwhile the dead battery wake-up feature ensures the display works no matter how long the product has been on the shelf – so buyers don't confuse a dead battery with a faulty product.

Consumer-friendly connections

With the DA14495, you can create audio solutions that let consumers connect to personal and online content libraries however they want. It features a USB 2.0 FS/HS port which supports USB charging specifications 1.2. It offers data rates up to 480 Mbps for excellent voice and music quality, and is fully compatible with USB 3.0 type C – the next-generation smartphone connectivity option. Moreover, the DA14495 supports two different host controller interface (HCI) clocking schemes. So you can easily combine it with the Bluetooth HCI of your choice to create exciting wireless applications.

Key features

- Multi-Level Modulation high speed 12 slot radio technology
- 32-bit ARM Cortex-M0 MCU operating at up to 165 MHz
- 32-bit Cadence (Tensilica) HiFi 3 DSP operating at up to 290 MHz
- USB 2.0 HS/FS interface (compatible with USB 3 type C)
- Multiple HCI clocking schemes for Bluetooth integration
- Triple stereo hardware sample rate converter up to 192 kHz
- Dual input 10-bit general purpose ADC
- Supports external QSPI Flash
- Integrated battery management for Li-ion and Li-polymer batteries
- High-precision fuel gauge
- Dead battery wake-up
- Extensive range of digital audio interfaces (SPDIF, PDM, I²S, SPI, UARTs, I²C, etc.)
- Small form factor, 7*7mm VBGA package



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