DATA SHEET

Jacoti lola SDK

Low-Latency Audio Transmission

Bi-Directional Audio Streaming Over Wi-Fi And Bluetooth LE

Overview

Jacoti Lola SDK is a Wireless Protocol implemented with the goal of having Low Latency Audio Communication applications work effectively on off-the-shelf devices and network infrastructures; hence allowing to bring this technology for a fraction of the price of other equivalent technologies without compromising latency, quality or signal-to-noise ratio.

The Jacoti Lola software development kit (SDK) is especially suited for applications running on connected devices located in small to medium sized venues with the aim of facilitating the communication of audio—speech and CD quality music—between the users of such devices.

Jacoti Lola SDK enables low latency high-quality audio transmission thus being especially adequate for conference rooms, classrooms and other situations where there is one person speaking to many, all of them physically present. In such situations, Jacoti Lola ensures that audio is not too delayed with respect to the lip movement of the speaker so the listeners can have a comfortable experience. It also features bi-directional communication that allows the listeners to speak up and make themselves be heard by the lead speaker and fellow listeners.

Bi-directional assistive hearing

This technology not only allows users to receive sound more clearly and distinctly but also enables them to actively engage in conversations, presentations, and interactions. By capturing and transmitting speech from various sources, this integration ensures that users can effortlessly participate in discussions and social interactions, even in challenging auditory environments. The result is an inclusive and enriched experience that enhances both the individual user's engagement and the overall accessibility of your product.

Optimal connectivity

Integrating both Wi-Fi and Bluetooth LE signals within your product offers a dynamic communication solution. This dual connectivity approach extends the device's reach, allowing seamless interaction across varying distances and scenarios. In situations where one signal encounters interference, the other serves as a reliable backup, ensuring uninterrupted communication.

Key features

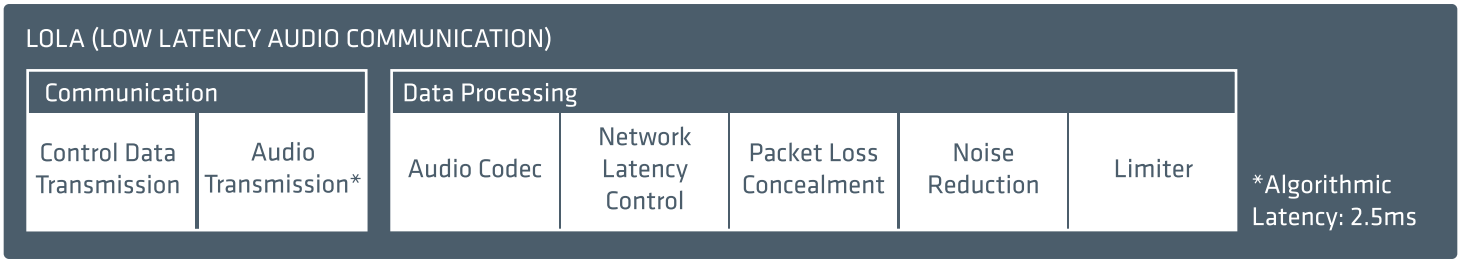
- Jacoti HearingKit®: Jacoti Lola SDK leverages Jacoti HearingKit® signal processing algorithms to provide noise reduction and sound limiting (higher possible output without distortion in the signal).
- Real-time Audio Encoding: Jacoti Lola SDK uses the Opus codec, which is unmatched for interactive speech and music transmission over the Internet, and it is standardized by the Internet Engineering Task Force (IETF) as RFC6716.
- Low and adjustable latency: Jacoti Lola SDK provides end-to-end (from the speaker's mouth to the listener's ear) communication in less than 30 milliseconds*. Jacoti Lola SDK adjusts the latency automatically according to the network performance.

  * On the iPhone 5 (and later), iPad (4th gen), iPad mini (2nd gen) and later and iPod touch 6th over an 4ipnet EAP767 WiFi Access Point network.
- Device discovery: Jacoti Lola SDK features device discovery so it allows creating minimal yet very usable graphical user interfaces which make Jacoti Lola SDK enabled products very easy to use.
- Bidireccional communication: Jacoti Lola SDK supports bidirectional communication that allows M-to-N audio transmission.
- Dougan automix: Within the framework of Jacoti Lola SDK, the embedded Dougan Automix capability enhances audio communication. This inherent feature ensures intelligent and automated audio mixing, optimizing clarity and balance in real-time audio interactions.

Patented technology

Jacoti Lola SDK leverages patented methods to address intricate patterns in low latency multimedia streaming environments.

- Method to handle problematic patterns in a low latency multimedia streaming environment. WO2016050916A1
- Method and device for latency adjustment. EP2979399B8



Written in C++ | Wi-Fi signal | Bluetooth LE signal | Compression ratio: 1:12 | Algorithmic Latency: 2.5 milliseconds | Mac OS X and iOS | Data Rates: 128 kbps | Audio Format: 32-bit 24kHz (CD Quality) | Frequency Response: 10Hz to 24kHz

Access points: We recommend using the EAP767 WiFi AP from 4ipnet (tested with up to 16 devices). Apple Airport Extreme and other mid-high end routers are also known to work well.

Designed and tested for real-life environments

2023 Sanremo Music Festival	For the final evening of the Sanremo Festival 2023, MED-EL provided Jacoti Lola to all hearing-challenged attendees, enabling them to enjoy music regardless of their hearing technology, brand, or type of hearing loss.
ENT and Audiology Clinic of Parkland Hospital	In a clinical field test, Lola improved attentiveness and comprehension among patients with hearing loss. Non-English fluent patients found enhanced clarity with Lola's increased signal-to-noise ratio (SNR). Both patients and staff reported improved hearing and enjoyment while using Lola.
2016 AuDacity Convention	During the Keynote address, up to 60 devices were simultaneously used on a single Lola network. Among normal-hearing listeners, 53% rated the Lola system as "excellent" for hearing assistance. Additionally, listeners with hearing loss found the system to be beneficial.
New York Opera Fest	Jacoti Lola was deployed at a Sign And Sing concert during the New York Opera Fest at Symphony Space. Users were impressed with the sound quality of the Jacoti Lola system.

Jacoti Lola SDK powers Jacoti Lola. Jacoti Lola SDK is designed to interoperate with Jacoti HearingKit®, making it possible to be integrated into Jacoti Inside.

About Jacoti

Jacoti BV | Hearing Technologies is a science-based company that develops hearing enhancement solutions embeddable in consumer devices. Its flagship product, Jacoti Inside, optimizes audio to each individual hearing requirement from consumer technologies to fully-fledged medical devices.

Contact us: www.jacoti.com | info@jacoti.com